SUPPLEMENT

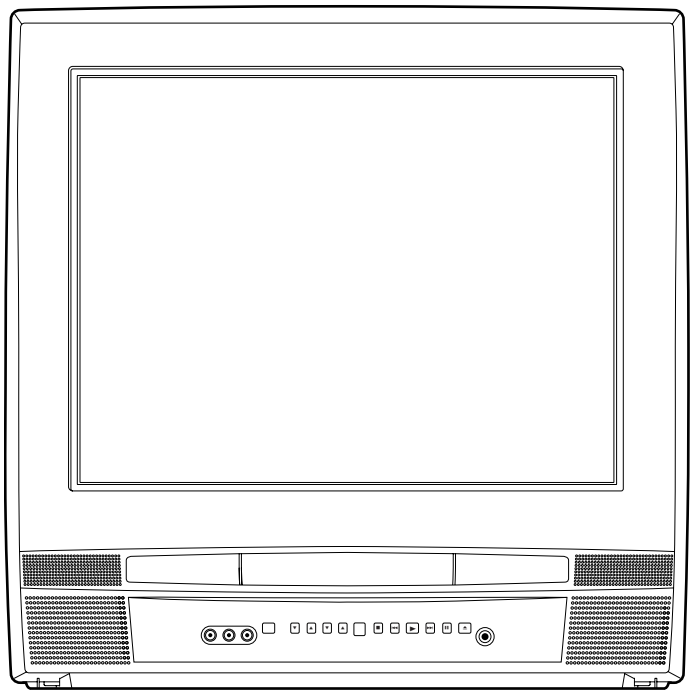
Emerson® MAGNAVOX

SERVICE MANUAL

This service manual shows only the differences between the model EWC20D5/MSD520FF and the original model 6520FDF. All other information is described in the service manual of the model 6520FDF.

20″ COLOR TV/DVD

EWC20D5/MSD520FF



EWC20D5

Different parts from the original model (6520FDF)

Ref. No.	Description	Part No.
A1X	FRONT CABINET ASSEMBLY T9101UB	1EM120122
A1-1	FRONT CABINET T9101UB	1EM020160
A1-2	CONTROL PLATE T9101UB	1EM320187
A1-3	BRAND PLATE T8012UN~EMERSON~	1EM420685
A3⚠	RATING LABEL T9101UB	----------
A4	Not Used	
A5	TRAY PANEL T9004UE	0EM302048
S1	CARTON T9101UB	1EM420878
S4	SERIAL NO. LABEL T9101UB	----------
S5	LABEL EAS(H3761UD) MAKER NO.ZLLFNSLE1	----------
X2⚠	OWNERS MANUAL T9101UB	1EMN20432
X3	REMOTE CONTROL 182/ERC001/NE208UD	NE208UD

MSD520FF

Different parts from the original model (6520FDF)

Ref. No.	Description	Part No.
MECHANICAL PARTS		
A1X	FRONT CABINET ASSEMBLY T9108UJ	1EM120250
A1-1	FRONT CABINET T9108UJ	1EM120254
A1-2	CONTROL PLATE T9108UJ	1EM320315
A1-3	BRAND BADGE B7304UE ~MAGNABOX~	0EM401476
A3⚠	RATING LABEL T9108UJ	----------
A4	Not Used	
A5	TRAY PANEL T9103UD	1EM420852
S1	CARTON T9108UJ	1EM421063
S4	SERIAL NO. LABEL T9108UJ	----------
X2⚠	OWNERS MANUAL T9108UJ	1EMN20357
X3	REMOTE CONTROL 182/ERC001/NE219UD	NE219UD
ELECTRICAL PARTS		
	DVD MAIN CBA UNIT	N79T0JUP

SYLVANIA

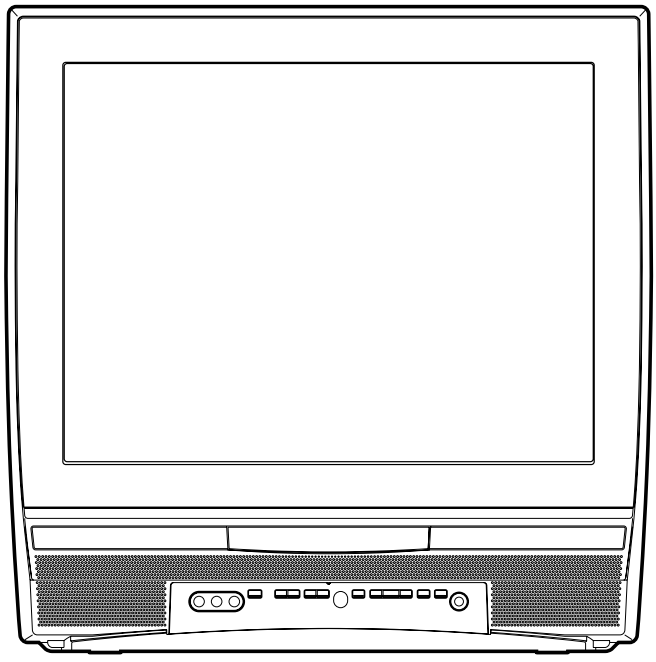
SERVICE MANUAL

Sec. 1: Main Section
- **Specifications**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**

Sec. 2: Exploded views and Parts List Section
- **Exploded views**
- **Parts List**

20" COLOR TV/DVD

6520FDD



IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

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MAIN SECTION

20" COLOR TV/DVD

6520FDD

Sec. 1: Main Section

- **Specifications**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**

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SPECIFICATIONS

< TV Section >

✳Test input terminal
<Except Tuner>----------Video input (1Vp-p)
Audio input (-10dB)
<Tuner>----------Ant. input (80dBμV) Video: 87.5%
Audio: 25kHz dev (1kHz Sin)

<DEFLECTION>

Description	Condition	Unit	Nominal	Limit
1. Over Scan	—	%	90	—
2. Linearity	Horizontal	%	—	15
	Vertical	%	—	10
3. High Voltage	—	kV	27	—

<VIDEO & CHROMA>

Description	Condition	Unit	Nominal	Limit
1. Misconvergence	Center	m/m	—	0.4
	Corner	m/m	—	2.1
	Side	m/m	—	1.4
2. Tint Control Range	—	deg	±30	—
3. Contrast Control Range	—	dB	6	2
4. Brightness (100% White Full Field)	Contrast: Max	ft-L	40	24
5. Color Temperature	—	K	9200	—

<TUNER>

Description	Condition	Unit	Nominal	Limit
1. Video S/N (80dBμV, TV4ch)	—	dB	45	40
2. Audio S/N (W/LPF)	—	dB	45	40
3. Audio Output Power at Speaker	—	W	1	0.8

Note: Nominal specifications represent the design specifications. All units should be able to approximate these. Some will exceed and some may drop slightly below these specifications. Limit specifications represent the absolute worst condition that still might be considered acceptable. In no case should a unit fail to meet limit specifications.

<DVD Section>

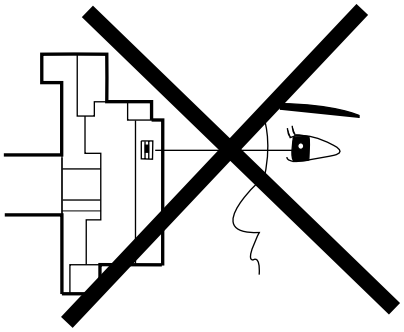
ITEM	CONDITIONS	UNIT	NOMINAL	LIMIT
1. Coaxial Digital Out	75 ohm load	mVpp	500	± 100

NOTES:

1. All Items are measured without pre-emphasis unless otherwise specified.
2. Power supply : AC120 V 60 Hz
3. Load imp. : 100 K ohm
4. Room ambient temperature: +25 °C

LASER BEAM SAFETY PRECAUTIONS

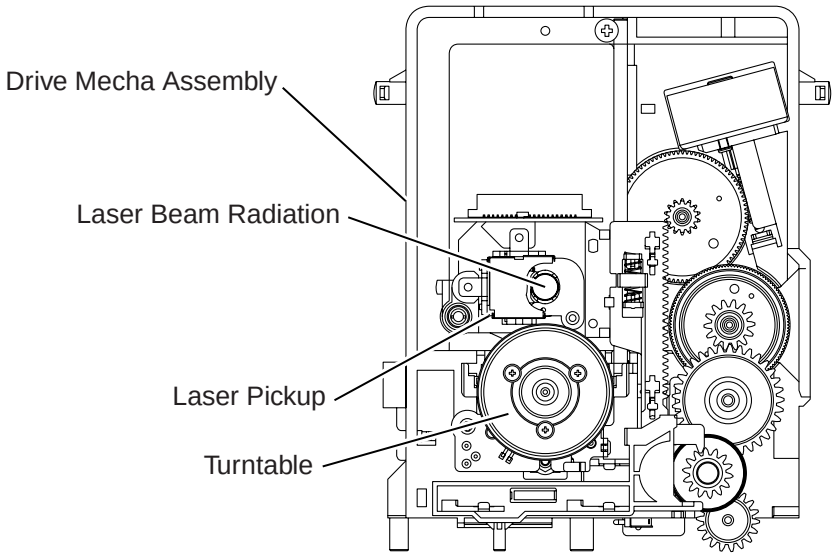
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

Caution: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



CAUTION
LASER RADIATION
WHEN OPEN. DO NOT
STARE INTO BEAM.

Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Safety Precautions for TV Circuit

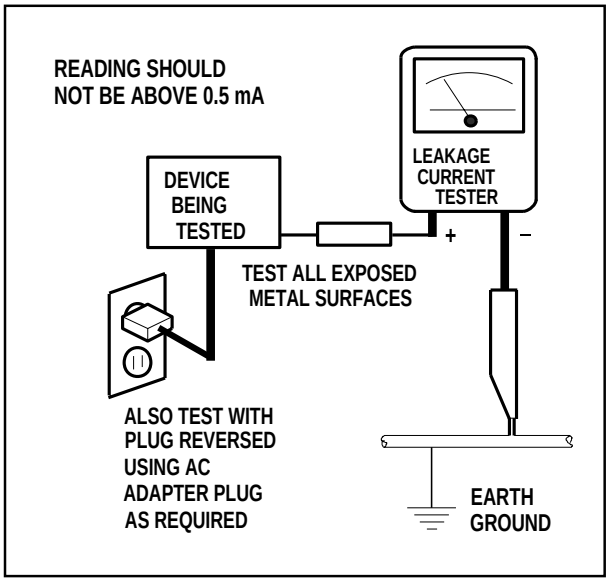
1. **Before returning an instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items:

a. Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

c. **Antenna Cold Check -** With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.

d. **Leakage Current Hot Check -** With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milli-ampere. Reverse the instrument power cord plug in the outlet and repeat the test.



ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

e. **X-Radiation and High Voltage Limits -** Because the picture tube is the primary potential source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original. Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place. High voltage must be measured each time servic-

ing is performed that involves B+, horizontal deflection or high voltage. Correct operation of the X-radiation protection circuits also must be reconfirmed each time they are serviced. (X-radiation protection circuits also may be called "horizontal disable" or "hold down.") Read and apply the high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications given on instrument labels and in the Product Safety & X-Radiation Warning note on the service data chassis schematic. High voltage is maintained within specified limits by close tolerance safety-related components/adjustments in the high-voltage circuit. If high voltage exceeds specified limits, check each component specified on the chassis schematic and take corrective action.

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.

3. Design Alteration Warning - Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

4. Picture Tube Implosion Protection Warning - The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.

5. Hot Chassis Warning -

a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and may be safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.

b. Some TV receiver chassis normally have 85V AC(RMS) between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.

c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.

6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and e. antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check AC power cord for damage.

7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

8. Product Safety Notice - Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc.. Parts that have special safety characteristics are identified by a (⚠) on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the (⚠) symbol are critical for safety.

Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.

Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1) Insulation Tape
2) PVC tubing
3) Spacers
4) Insulators for transistors.

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

G. Check that replaced wires do not contact sharp edged or pointed parts.

H. When a power cord has been replaced, check that 5~6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector

When replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, in order to prevent shock hazards, perform carefully and precisely the following steps.

Replacement procedure

1) Remove the old connector by cutting the wires at a point close to the connector.

   Important: Do not re-use a connector (discard it).

2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the TV/DVD connectors, first, disconnect the AC plug from AC supply socket.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Region	Clearance Distance (d) (d')
110 to 130 V	USA or CANADA	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

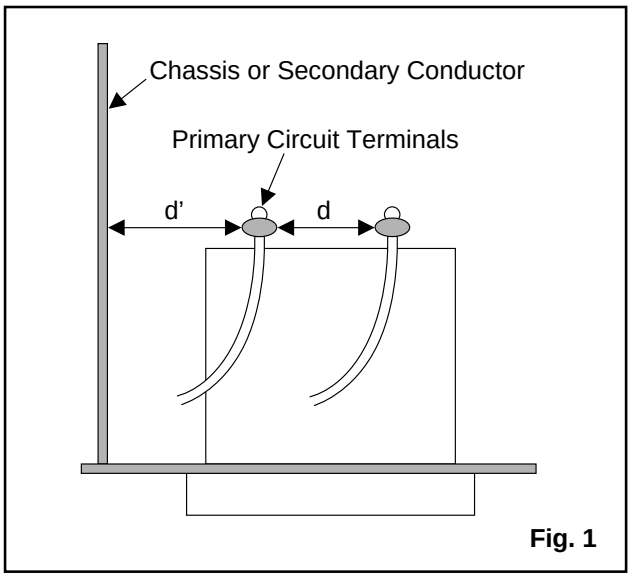


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig. 2 and following table.

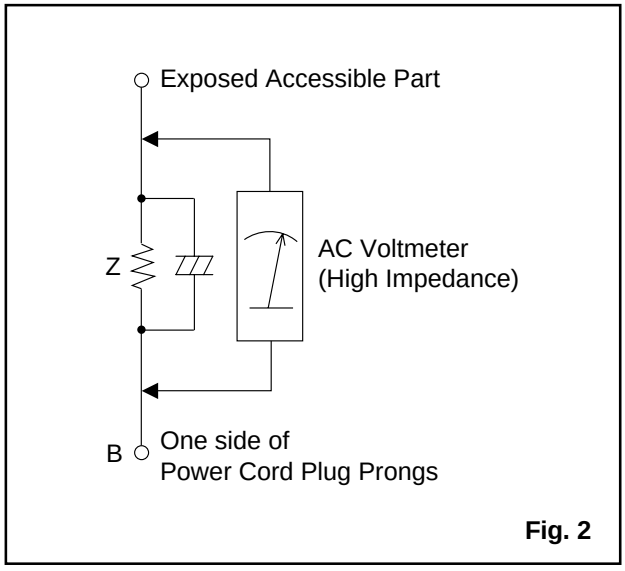


Fig. 2

Table 2: Leakage current ratings for selected areas

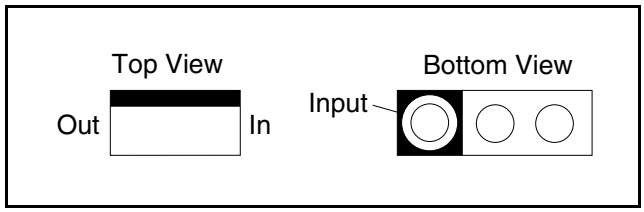
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	USA or CANADA	0.15μF CAP. & 1.5kΩ RES. connected in parallel	i≤0.5mA rms	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

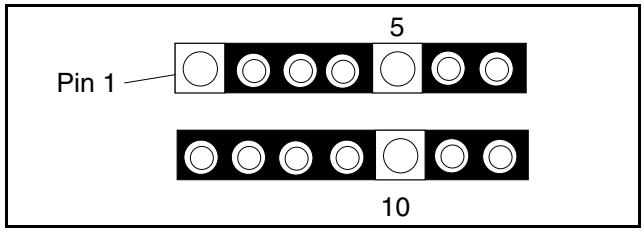
STANDARD NOTES FOR SERVICING

Circuit Board Indications

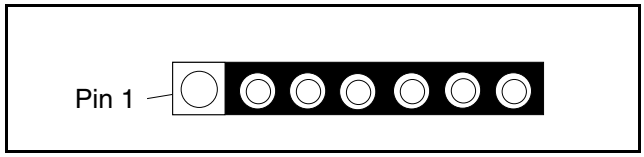
1. The output pin of the 3 pin Regulator ICs is indicated as shown:



2. For other ICs, pin 1 and every 5th pin is indicated as shown:

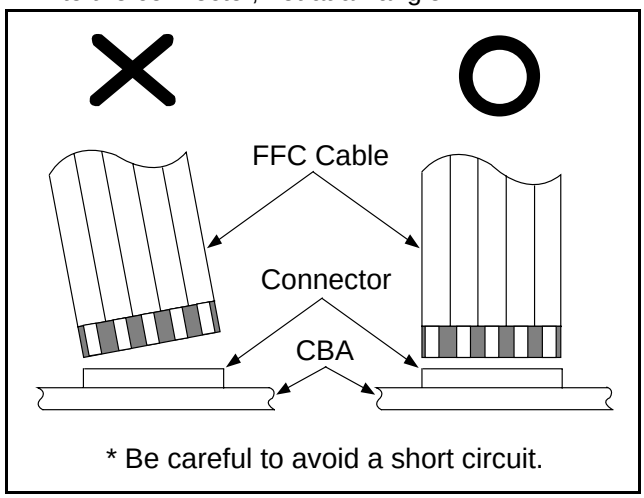


3. The 1st pin of every pin connector are indicated as shown:



Instructions for Connectors

1. When you connect or disconnect FFC cable (connector), be sure to disconnect the AC cord.
2. FFC cable (connector) should be inserted parallel into the connector, not at an angle.



[CBA= Circuit Board Assembly]

How to Remove / Install Flat Pack IC

Caution:

3. Do not apply the hot air to the chip parts around the Flat Pack-IC for over 6 seconds as damage may occur to the chip parts. Put Masking Tape around the Flat Pack-IC to protect other parts from damage. (Fig. S-1-2)
4. The Flat Pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or solder lands under the IC when removing it.

1. Removal

With Hot - Air Flat Pack - IC Desoldering Machine:

a. Prepare the Hot - Air Flat Pack - IC Desoldering Machine, then apply hot air to Flat Pack - IC (about 5~6 seconds). (Fig. S-1-1)

b. Remove the Flat Pack- IC with tweezers while applying the hot air.

With Soldering Iron:

a. Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)

b. Lift each lead of the Flat Pack - IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air Desoldering Machine. (Fig. S-1-4)

With Iron Wire:

a. Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)

b. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

c. Pull up on the wire as the solder melts so as to lift the IC leads from the CBA contact pads, while heating the pins using a fine tip soldering iron or hot air blower.

Note:

When using a soldering iron, care must be taken to ensure that the Flat Pack - IC is not being held by glue, or when it is removed from the CBA, it may be damaged if force is used.

2. Installation

a. Using desoldering braid, remove the solder from the foil of each pin of the Flat Pack - IC on the CBA, so you can install a replacement Flat Pack - IC more easily.

b. The "●" mark on the Flat Pack - IC indicates pin 1 (See Fig. S-1-6). Make sure this mark matches the 1 on the CBA when positioning for installation. Then pre - solder the four corners of the Flat Pack-IC (See Fig. S-1-7).

c. Solder all pins of the Flat Pack - IC. Make sure that none of the pins have solder bridges.

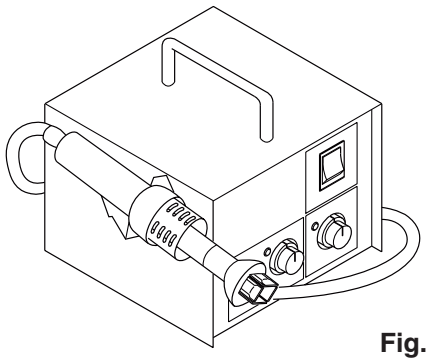


Fig. S-1-1

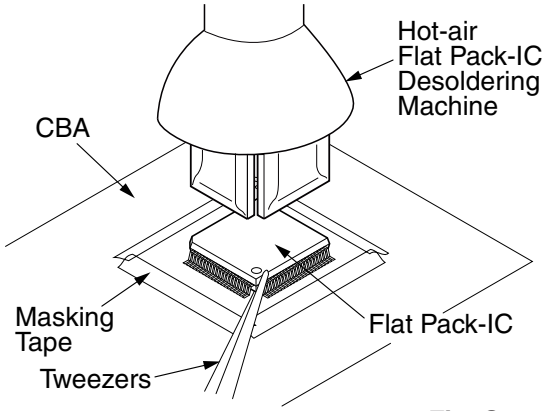


Fig. S-1-2

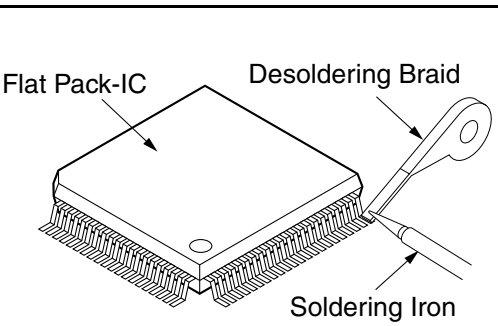


Fig. S-1-3

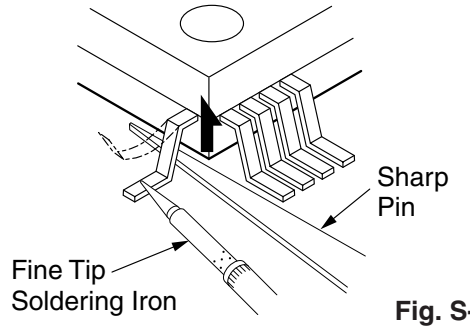


Fig. S-1-4

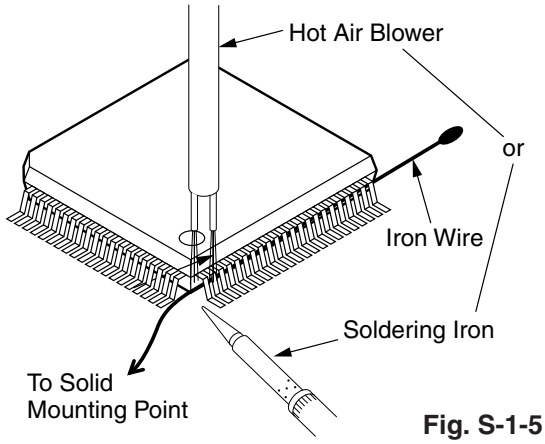
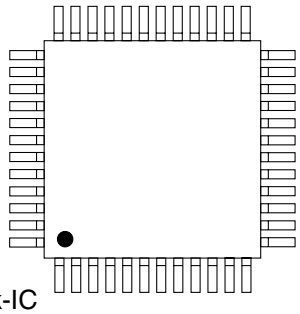


Fig. S-1-5

Example :



Pin 1 of the Flat Pack-IC is indicated by a " ● " mark.

Fig. S-1-6

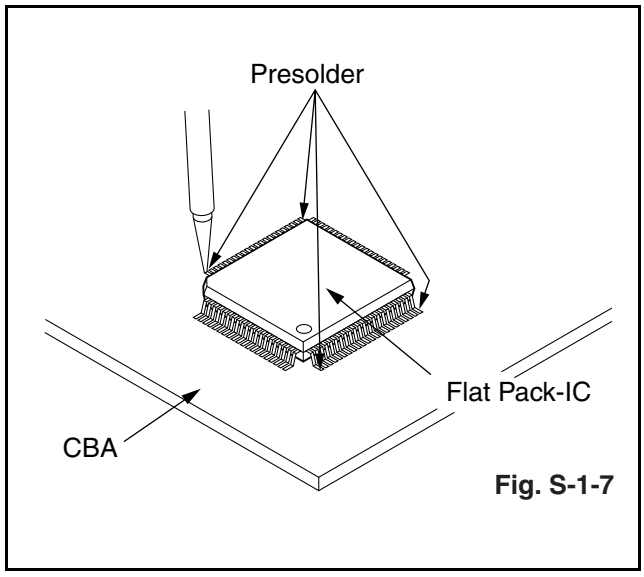


Fig. S-1-7

Instructions for Handling Semiconductors

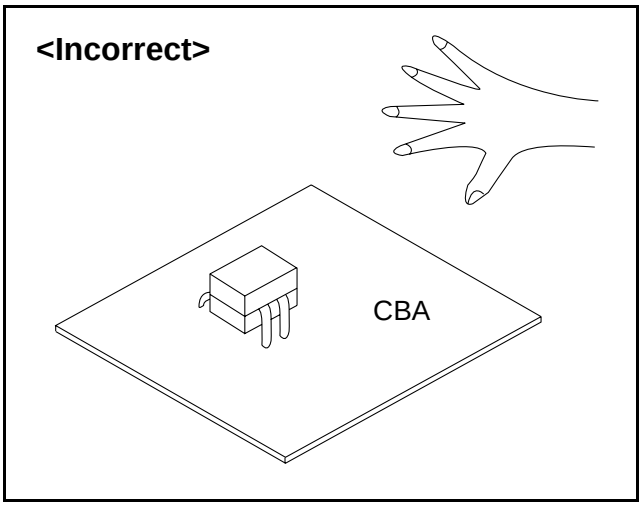
Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

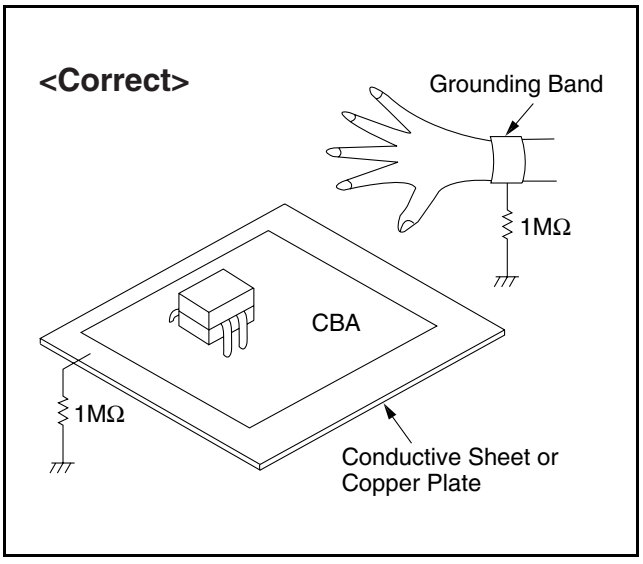
Ground for Human Body

Be sure to wear a grounding band (1MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

Ground for Work Bench

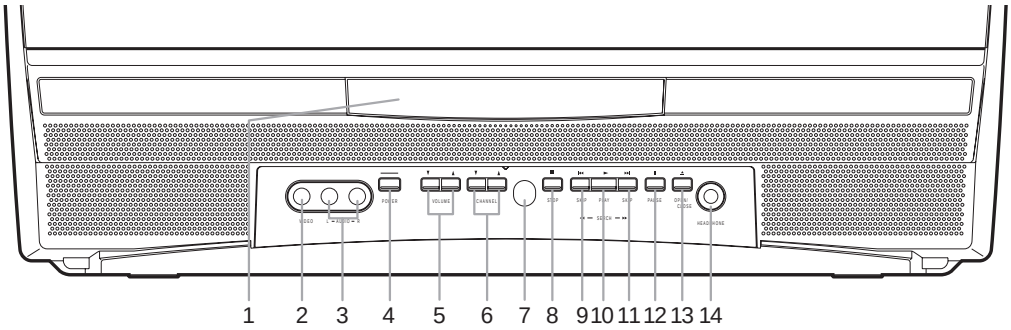
Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) on the work bench or other surface, where the semiconductors are to be placed. Because the static electricity charge on the clothing will not escape through the body grounding band, be careful to avoid contacting semiconductors to clothing.



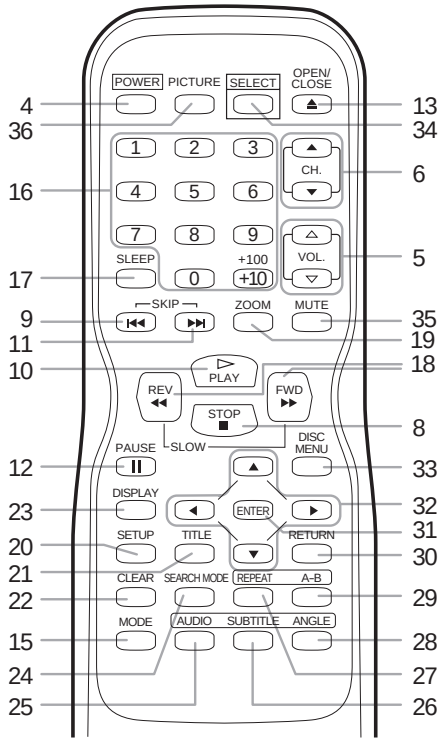


OPERATING CONTROLS AND FUNCTIONS

TV/DVD FRONT PANEL

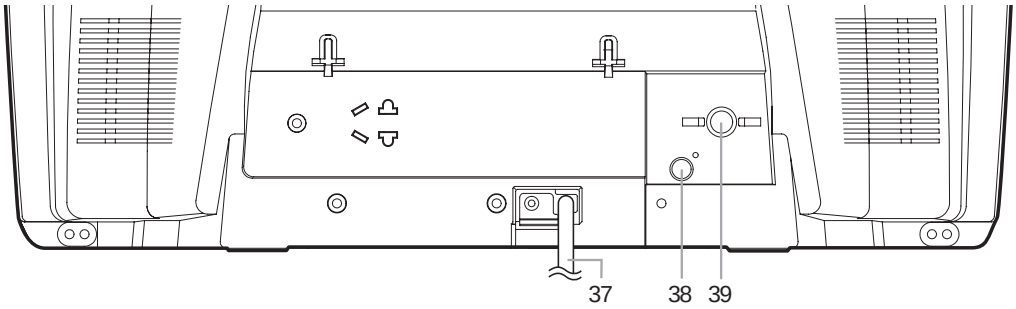


REMOTE CONTROL



1. **Disc loading tray**
2. **VIDEO input Jack**
   Connect to the video output jack of a video camera or VCR.
3. **AUDIO L/R input Jacks**
   Connect to the audio output jacks of a video camera or VCR.
4. **POWER Button**
   Press to turn the power on and off.
5. **VOLUME ▲/▼ (VOL. △/▽) Buttons**
   Press to control the volume level for the DVD and TV.
6. **CHANNEL ▲/▼ (CH. ▲/▼) Buttons**
   Press to select memorized channel.
   Press to change to TV mode when DVD mode.
7. **Remote Sensor Window**
8. **STOP Button**
   Stops operation of the disc.
9. **SKIP |◀◀ Button**
   Plays back from the beginning of the current chapter or track.
   SEARCH (REV) ◀◀ Button (Front Panel)
   During playback or in the pause mode, press and hold button down for a few seconds to change reverse playback speed.
10. **PLAY Button**
    Starts playback of the disc contents.
    Press to change to DVD mode when TV mode.
11. **SKIP ▶▶| Button**
    Plays back from the beginning of the next chapter or track.
    SEARCH (FWD) ▶▶ Button (Front Panel)
    During playback or in the pause mode, press and hold button down for a few seconds to change forward playback speed.
12. **PAUSE Button**
    Pauses the current disc operation.
13. **OPEN/CLOSE Button**
    Press to insert discs into or remove them from the tray.
14. **HEADPHONE Jack**
    To connect headphone (not supplied) for personal listening.
15. **MODE Button**
    Activates program playback or random playback mode when playing CDs or MP3.
16. **Number Button**
    TV Mode:
    Press two digits to directly access the desired channel.
    Remember to press a "0" before a single digit channel.
    +100 Button
    Press to select cable channels which are equal or greater than number 100.
    DVD Mode:
    Press to enter the desired number.
    +10 Button
    Press to enter the desired numbers which are equal or greater than number 10.

TV/DVD REAR VIEW



17. SLEEP Button
Press SLEEP to display the sleep timer and start the function. The shut off time can be determined by the number of times you press this button. (0, 30, 60, 90, or 120 minutes)

18. REV ◄◄ Button
Press to view the DVD picture in fast reverse motion. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the reverse speed of slow motion.

FWD ►► Button
Press to fast forward the Disc. Press PAUSE, then press this button to begin slow motion playback. Press this button repeatedly to change the forward speed of slow motion.

19. ZOOM Button
Expands the picture to fill the entire screen.

20. SETUP Button
Press to enter or exit the TV menu or DVD setup mode.

21. TITLE Button
Displays the title menu.

22. CLEAR Button
Resets a setting.

23. DISPLAY Button
TV Mode:
Press to display the channel number on the screen. If you press it again, the channel number will disappear.
DVD Mode:
Displays the current status on the TV screen for checking purposes.

24. SEARCH MODE Button
Press to locate a desired point.

25. AUDIO Button
Press to select a desired audio language or sound mode.

26. SUBTITLE Button
Press to select a desired subtitle language.

27. REPEAT Button
Repeats playback of the current disc, title, chapter or track.

28. ANGLE Button
Press to change the camera angle to see the sequence being played back from a different angle.

29. REPEAT A-B Button
Repeats playback of a selected section.

30. RETURN Button
Returns to the previous operation in the DVD setup mode.

31. ENTER Button
Press to accept a setting.

32. Arrow Buttons
TV Mode:
Press to select a setting mode from the menu on the TV screen.
Press to select or adjust from a particular menu.
DVD Mode:
Use when making settings while watching the display on a TV screen.

33. DISC MENU Button
Displays the menus in the DVD.

34. SELECT Button
Press to change to TV mode, external input mode or DVD mode.

NOTE: When you select the DVD mode by this button, press PLAY or OPEN/CLOSE first. Otherwise, the DVD features are not operated.

35. MUTE Button
Press MUTE to turn off the sound portion of the TV program. (Volume level display turns LIGHT RED from LIGHT BLUE.) Press MUTE again or press VOL. △ or ▽to restore sound.

36. PICTURE Button
Press to enter picture adjustment mode.

37. Power cord
Connect to a standard AC outlet (120V/60Hz).
NOTE: Remove the power cord from the hook to avoid breaking a wire before you connect to a standard AC outlet.

38. COAXIAL digital audio out Jack (DVD Audio Only)
Connect to the digital input of an external amplifier or decoder.

39. ANT. in Jack
Connect to an antenna, cable system, or satellite system.

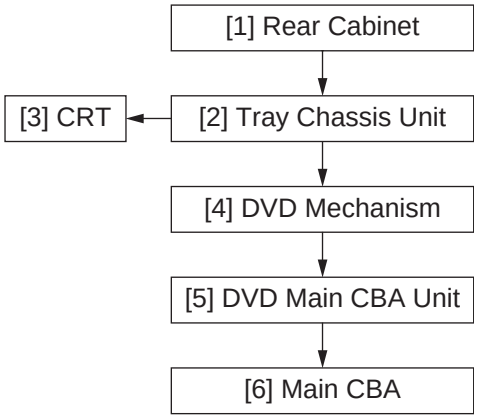
CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts, and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route and dress the cables as they were.

Caution !

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/UNLOCK/ RELEASE/UNPLUG/ DESOLDER	Note
[1]	Rear Cabinet	1	4(S-1), 2(S-2)	-
[2]	Tray Chassis Unit	2,3, 5	Anode Cap, CN1801, CN1802, CN505, CRT CBA, CN1601, CN1571	1
[3]	CRT	2	4(S-3)	-
[4]	DVD Mechanism	3,4, 5	3(S-4), 2(S-5), Loder Cover, CN201, CN301	2-1 2-2 2-3 2-4 3
[5]	DVD Main CBA Unit	3,5	2(S-6), Shield Box, CN001, CN002	-
[6]	Main CBA	3	5(S-7), (S-8)	-
		(1)	(2) (3) (4)	(5)

(1): Order of steps in Procedure. When reassembling, follow the steps in reverse order.These numbers are also used as the identification (location) No. of parts in Figures.

(2): Parts to be removed or installed.

(3): Fig. No. showing Procedure of Part Location.

(4): Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
S=Screw, P=Spring, L=Locking Tab, CN=Connector, *=Unhook, Unlock, Release, Unplug, or Desolder
2(S-2) = two Screw (S-2)

(5): Refer to the following "Reference Notes in the Table."

Reference Notes in the Table

Caution !

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

CAUTION 1: Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

1. Disconnect the following: Anode Cap, CN1801, CN1802, CN505, CRT CBA, CN1601, and CN1571.
   Then remove Tray Chassis Unit.

CAUTION 2: Electrostatic breakdown of the laser diode in the optical system block may occur as a potential difference caused by electrostatic charge accumulated on cloth, human body etc., during unpacking or repair work.

To avoid damage of pickup follow next procedures.

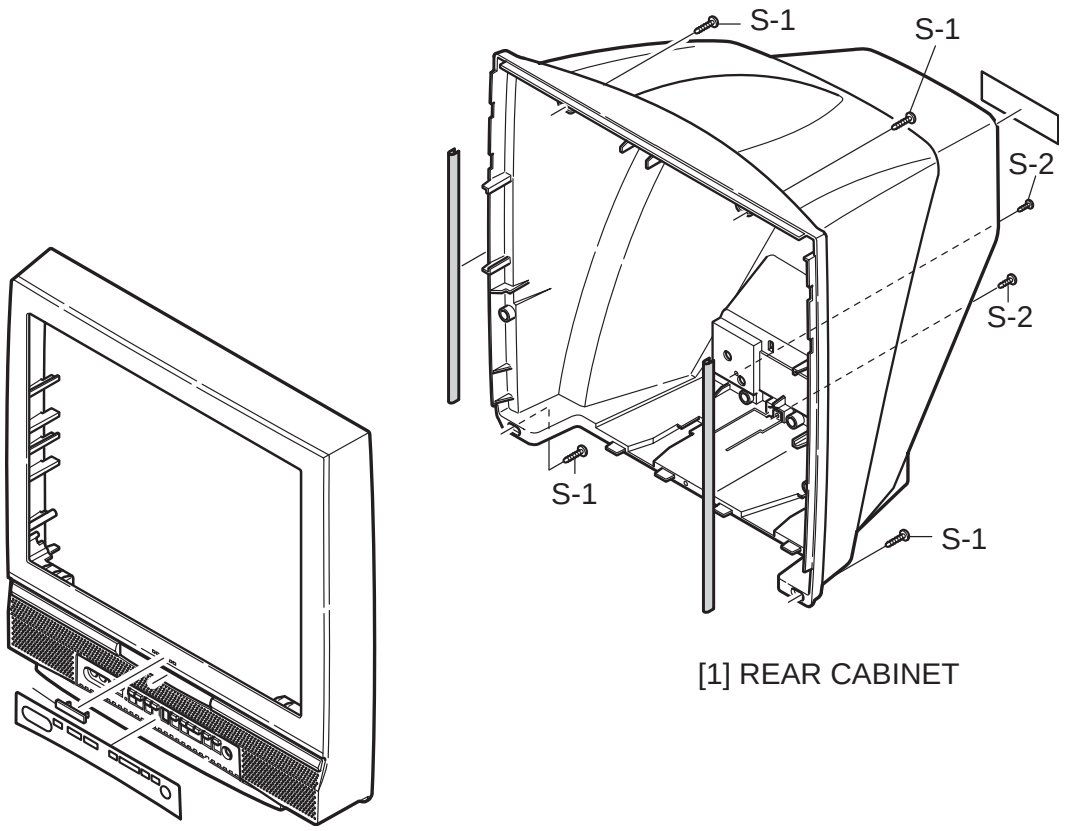
2-1. Disconnect Connector (CN301) on the DVD Main CBA Unit.

2-2. Remove three Screws (S-4) and lift the DVD Mechanism up. (Fig. 3)

2-3. Short the three short lands of FPC cable with solder before removing the FFC cable (CN201) from it. If you disconnect the FFC cable (CN201), the laser diode of pickup will be destroyed. (Fig. 4)

2-4. Remove two Screws (S-5) and Loder Cover.

CAUTION 3: When reassembling, confirm the FFC cable (CN201) is connected completely. Then remove the solder from the three short lands of FPC cable. (Fig. 4)



[1] REAR CABINET

Fig. 1

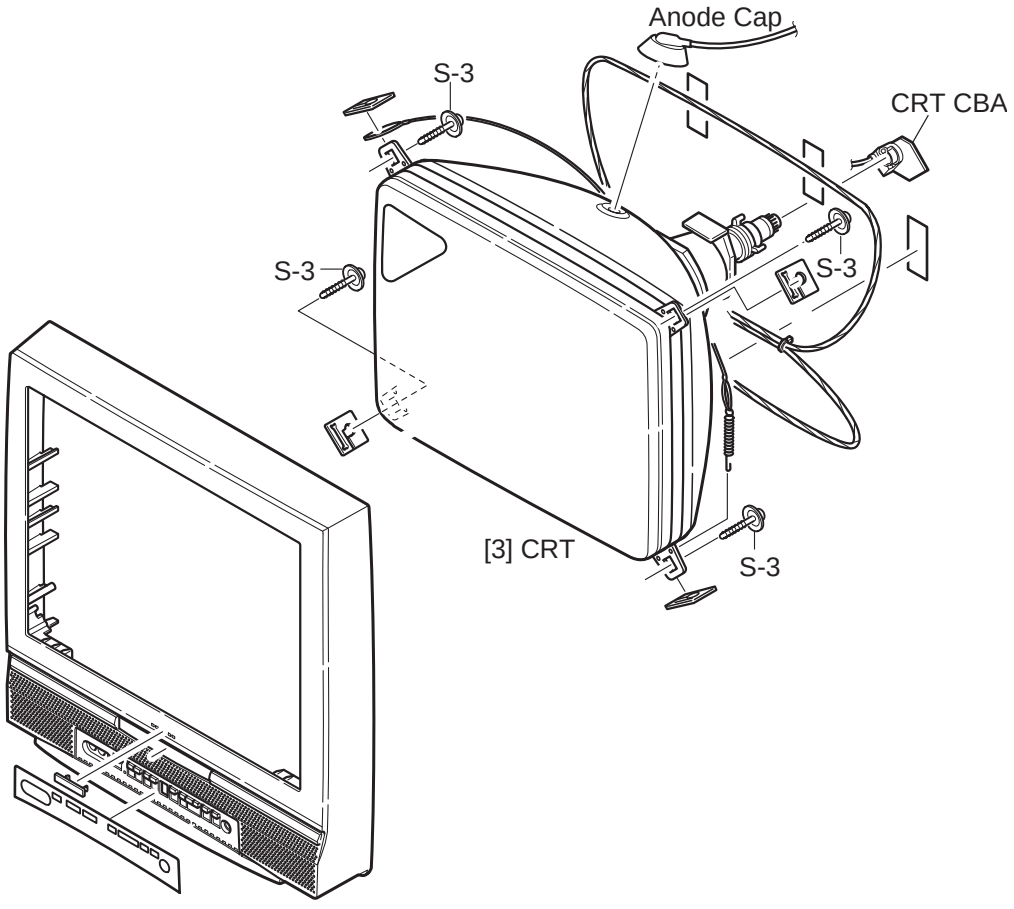


Fig. 2

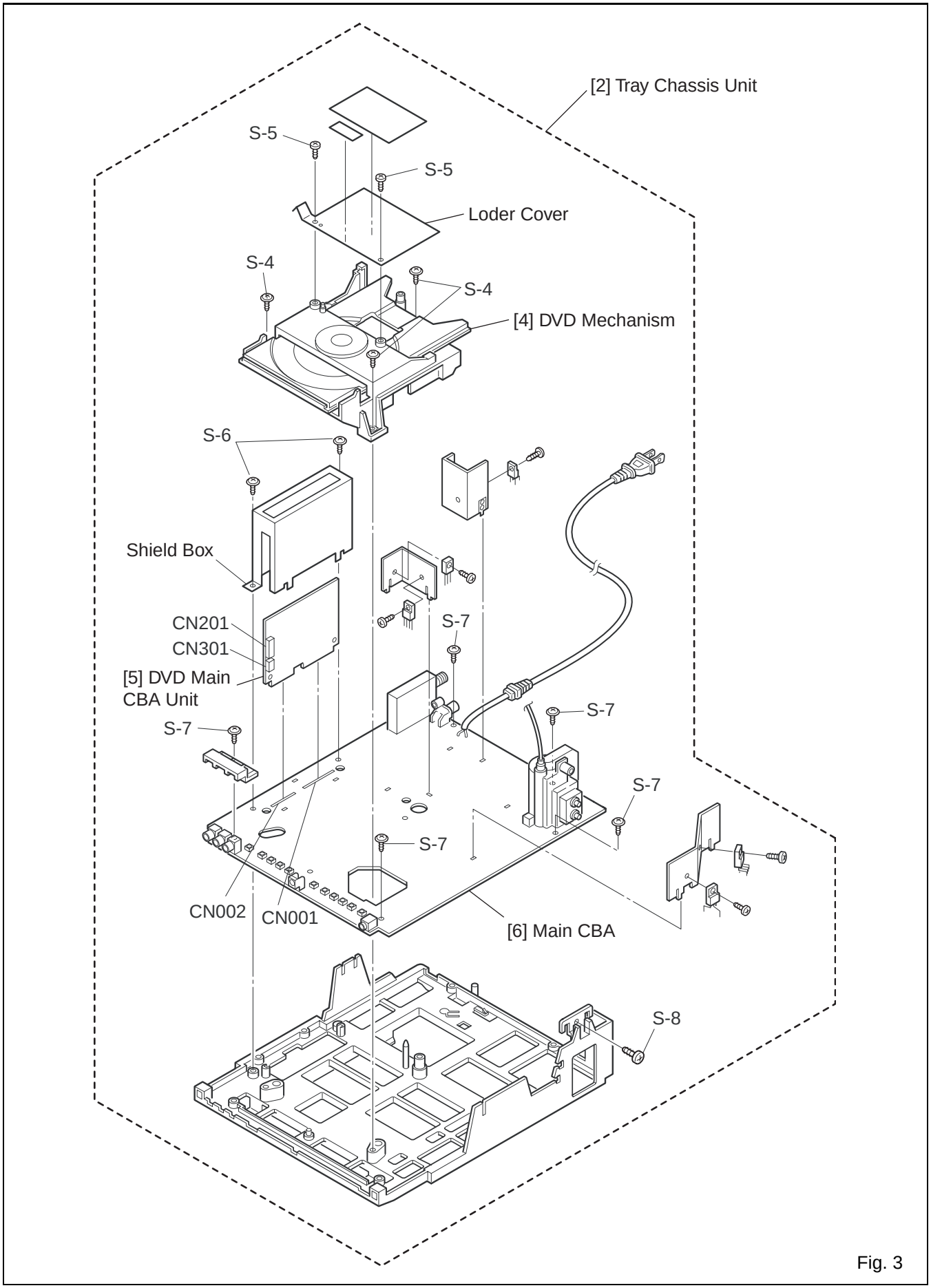

[2] Tray Chassis Unit
S-5
S-5
Loder Cover
S-4
S-4
[4] DVD Mechanism
S-6
Shield Box
CN201
CN301
[5] DVD Main
CBA Unit
S-7
S-7
S-7
S-7
S-7
CN002
CN001
[6] Main CBA
S-8

Fig. 3

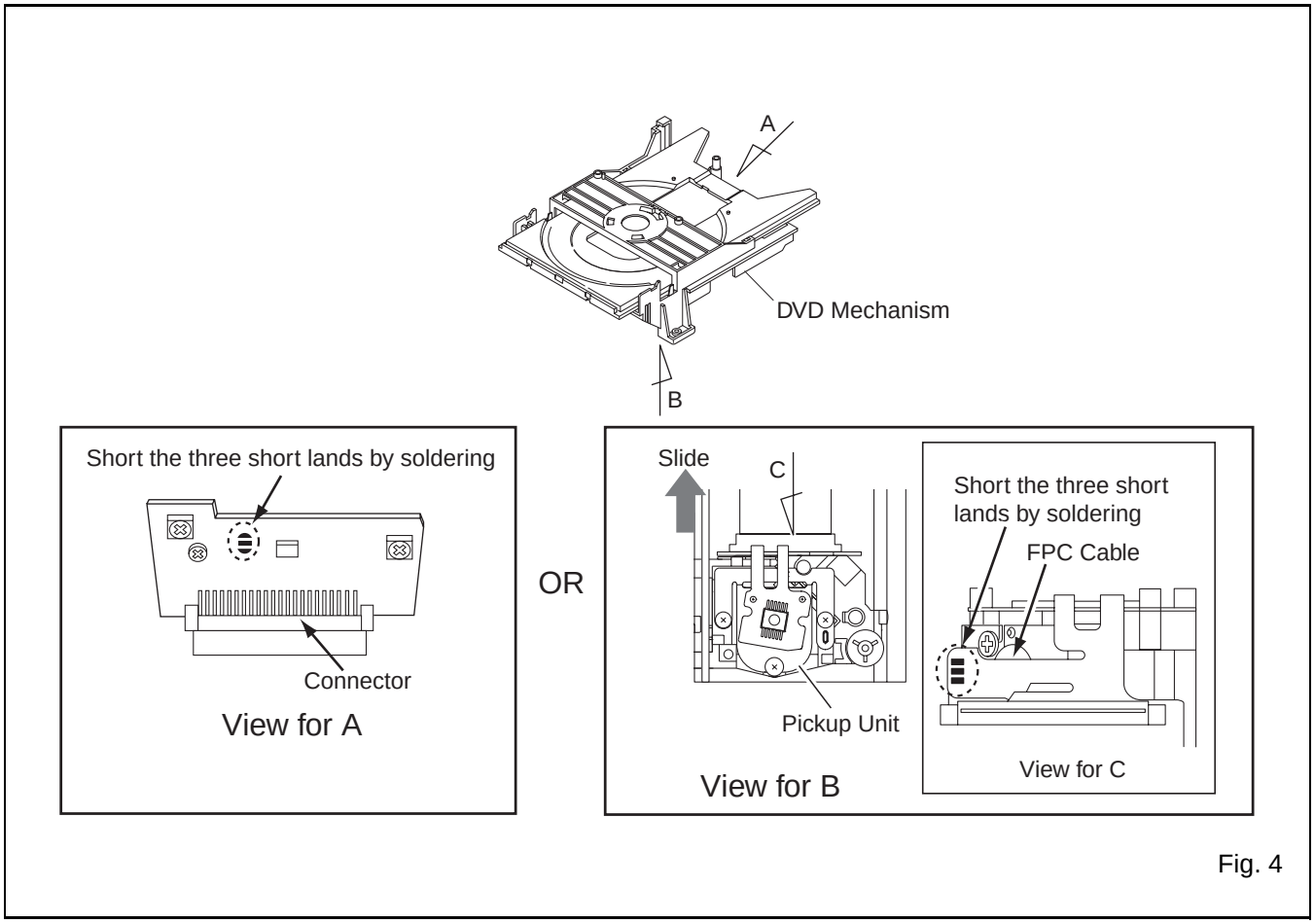

A
DVD Mechanism
B
Short the three short lands by soldering
Connector
View for A
OR
Slide
C
Pickup Unit
View for B
Short the three short lands by soldering
FPC Cable
View for C

Fig. 4

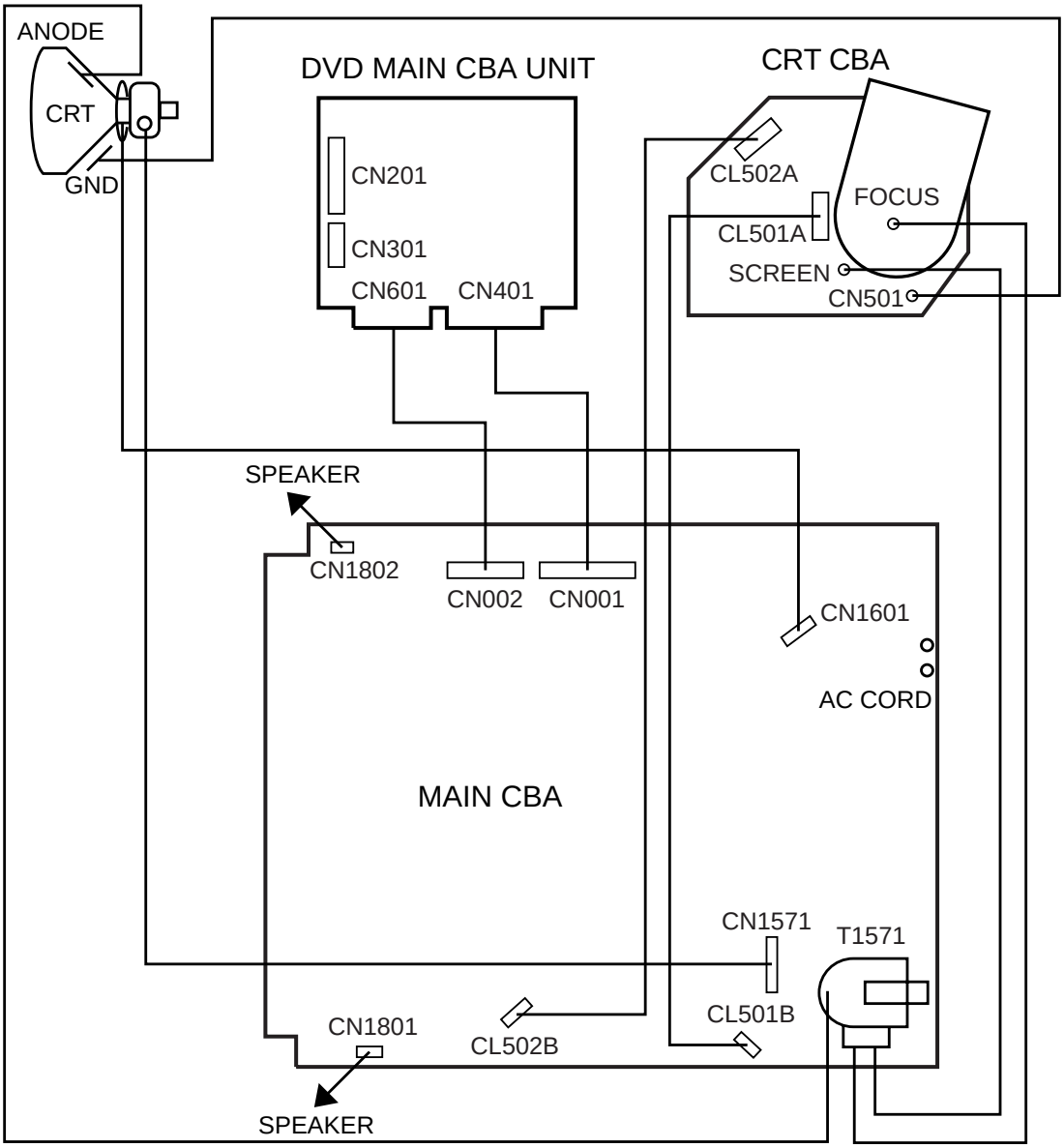

ANODE
CRT
GND
DVD MAIN CBA UNIT
CN201
CN301
CN601
CN401
CRT CBA
CL502A
FOCUS
CL501A
SCREEN
CN501
SPEAKER
CN1802
CN002
CN001
CN1601
AC CORD
MAIN CBA
CN1571
T1571
CL501B
CN1801
CL502B
SPEAKER

Fig. 5

ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note:

"CBA" is abbreviation for "Circuit Board Assembly."

NOTE:

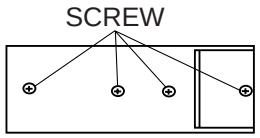
Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to perform these adjustments only after all repairs and replacements have been completed.
Also, do not attempt these adjustments unless the proper equipment is available.

Test Equipment Required

1. NTSC Pattern Generator (Color Bar W/White Window, Red Color, Dot Pattern, Gray Scale, Monoscope, Multi-Burst)
2. AC Milli Voltmeter (RMS)
3. DC Voltmeter
4. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div,
   F-Range: DC~AC-60MHz
5. Frequency Counter
6. Plastic Tip Driver

How to make service remote control unit:

1. Prepare remote control unit. (Part No. NE200UD or NE207UD) Remove 4 screws from the back lid. (Fig. 1-1)



Remote control unit (Bottom) **Fig. 1-1**

2. Remote control unit: Part No. NE200UD or NE207UD
   Cut off pin 10 of the remote control microprocessor and short circuit pins 10 and 17 of the microprocessor with a jumper wire.

How to Set up the Service mode:

Service Mode:

1. Use the service remote control unit.
2. Turn the power on.
3. Press "DISC MENU" button on the service remote control unit.

1. DC 114V (+B) Adjustment

Purpose: To obtain correct operation.

Symptom of Misadjustment: The picture is dark and unit does not operate correctly.

Test point	Adj. Point	Mode	Input
J2023 (+B) TP1303 (GND)	VR1601	---	-----
Tape	M. EQ.	Spec.	
---	DC Voltmeter Plastic Tip Driver	+114±0.5V DC	

Note:
J2023 (+B), TP1303 (GND), VR1601 --- Main CBA

1. Connect the unit to AC Power Outlet.
2. Connect DC Volt Meter to J2023 (+B) and TP1303 (GND).
3. Adjust VR1601 so that the voltage of J2023 (+B) becomes +114±0.5V DC.

2. Black Stretch Control Adjustment

Purpose: To show the fine black color.

Symptom of Misadjustment: Black color will not appear correctly.

Note: Use service remote control unit.

1. Enter the Service mode. (See page 1-7-1)
2. Press "6" button on the service remote control unit. "B-S" is indicated.
3. Press "CH ▲ / ▼" buttons on the service remote control unit so that display will change "OFF," "0," "1," "2" and "3." Then choose "B-S OFF."
4. Press "6" button on the service remote control unit. "BS-2" is indicated.
5. Press "CH ▲ / ▼" buttons on the service remote control unit so that display will change "0" and "1." Then choose "BS-2 0."
6. Turn the power off and on again, using the main power button on the TV unit.

3. Setting for CONTRAST, COLOR, TINT, V-TINT and SHARP data Values

General

1. Enter the Service mode. (See page 1-7-1)
2. Press "PICTURE" button on the service remote control unit. Display changes "BRIGHT," "CONTRAST," "COLOR," "TINT," and "V-TINT" cyclically when "PICTURE" button is pressed.

CONTRAST (CNT)

1. Press "PICTURE" button on the service remote control unit. Then select "CONTRAST" (CNT) display.
2. Press "CH ▲ / ▼" buttons on the service remote control unit so that the value of "CONTRAST" (CNT) becomes 76.

COLOR (CLR)

1. Press "PICTURE" button on the service remote control unit. Then select "COLOR" (CLR) display.
2. Press "CH ▲ / ▼" buttons on the service remote control unit so that the value of "COLOR" (CLR) becomes 55.

TINT (TNT)

1. Press "PICTURE" button on the service remote control unit. Then select "TINT" (TNT) display.
2. Press "CH ▲ / ▼" buttons on the service remote control unit so that the value of "TINT" (TNT) becomes 58.

V-TINT (V-TNT)

1. Press "PICTURE" button on the service remote control unit. Then select "V-TINT" (V-TNT) display.
2. Press "CH ▲ / ▼" buttons on the service remote control unit so that the value of "V-TINT" (V-TNT) becomes 57.

Note: BRIGHT data value does not need to be adjusted at this moment.

4. V. Size Adjustment

Purpose: To obtain correct vertical height of screen image.

Symptom of Misadjustment: If V. Size is incorrect, vertical height of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

1. Operate the unit for at least 20 minutes.
2. Enter the Service mode. (See page 1-7-1.)
   Press "9" button on the remote control unit and select V-S Mode. (Press "9" button then display will change to V-P and V-S).
3. Input monoscope pattern.
4. Press "CH ▲ / ▼" buttons on the remote control unit so that the monoscope pattern is 90±5% of display size and the circle is round.

5. V. Position Adjustment

Purpose: To obtain correct vertical width of screen image.

Symptom of misadjustment: If V. Position is incorrect, vertical height of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	Screen Control, CH ▲ / ▼ buttons	RF	Monoscope
Tape	M. EQ.	Spec.	
---	Pattern Generator	90±5%	

Note: Use service remote control unit

1. Operate the unit for at least 20 minutes.
2. Enter the Service Mode. (See page 1-7-1)
3. Receive the Monoscope Pattern.
4. Press "9" button on the service remote control unit and select "V-P" mode. (Display change "V-S" and "V-P" cyclically when "9" button is pressed.)
5. Press "CH ▲ / ▼" buttons on the service remote control unit so that the top and bottom of the monoscope pattern will be equal of each other.
6. Turn the power off and on again, using the main power button on the TV unit.

6. H. Position Adjustment

Purpose: To obtain correct horizontal position of screen image.

Symptom of Misadjustment: If H. Position is incorrect, horizontal position of image on the screen may not be properly displayed.

Test Point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons [H-P] Mode	RF	Mono-scope
Tape	M. EQ.	Spec.	
---	Monoscope	90±5%	

Note: Use service remote control unit

1. Operate the unit for at least 20 minutes.
2. Enter the Service mode. (See page 1-7-1)
3. Receive the Monoscope Pattern.
4. Press "8" button on the remote control unit and select "H-P" mode.
5. Press "CH ▲ / ▼" buttons on the service remote control unit so that the monoscope pattern will be 90±5% of display size and the circle is round.
6. Turn the power off and on again, using the main power button on the TV unit.

7. White Balance Adjustment

Purpose: To mix red, green and blue beams correctly for pure white.

Symptom of Misadjustment: White becomes bluish or reddish.

Test Point	Adj. Point	Mode	Input
Screen	CH ▲ / ▼ buttons	RF	White Raster (APL 100%)
Tape	**M. EQ.**	**Spec.**	
	Pattern Generator, Color analyzer	See below	
Figure			

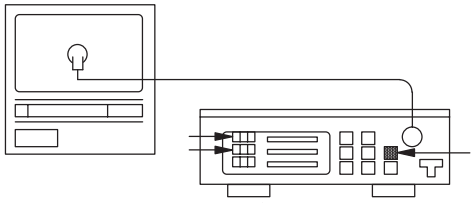


Fig. 2

Note: Use service remote control unit

1. Operate the unit more than 20 minutes.
2. Face the unit to east. Degauss the CRT using Degaussing Coil.
3. Input the White Raster (APL 100%).
4. Set the color analyzer to the CHROMA mode and after zero point calibration, bring the optical receptor to the center on the tube surface (CRT).
5. Enter the Service mode. Press "VOL ▼" button on the service remote control unit and select "C/D" mode. (Display changes "C/D," "7F," "DVD-KEY," and "DVD-TEST" cyclically when "VOL ▼" button is pressed.)
6. Press "4" button on the service remote control unit for Red adjustment. Press "5" button on the service remote control unit for Blue adjustment.
7. In each color mode, press "CH ▲ / ▼" button to adjust the values of color.
8. Adjusting Red and Blue color so that the temperature becomes 9200K (x: 286 / y: 294) ±3%.
9. At this time, re-check that Horizontal line is white. If not, Re-adjust Cut-off Adjustment until the Horizontal Line becomes pure white.
10. Turn off and on again to return to normal mode. Receive APL 100% white signal and Check Chroma temperatures become 9200K (x: 286 / y: 294) ±3%.

Note: Confirm that Cut Off Adj. is correct after this adjustment, and attempt Cut Off Adj. if needed.

8. Sub-Brightness Adjustment

Purpose: To get proper brightness.

Symptom of Misadjustment: If Sub-Brightness is incorrect, proper brightness cannot be obtained by adjusting the Brightness Control.

Test Point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	RF	IQW
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below	
Figure			

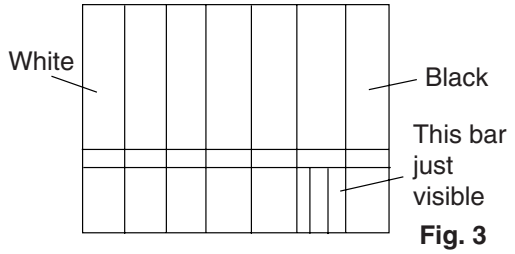


Fig. 3

Note: IQW Setup level --- 7.5 IRE
Use service remote control unit

1. Enter the Service mode. (See page 1-7-1)
   Then input IQW signal from RF Input.
2. Press "PICTURE" button on the service remote control unit and Select "BRT" mode. (Display changes "BRT," "CNT," "CLR," "TNT," and "V-TINT" cyclically when "PICTURE" button is pressed.) Press "CH ▲ / ▼" buttons so that the bar is just visible (See above figure).
3. Turn the power off and on again, using the main power button on the TV unit.

9. Focus Adjustment

Purpose: Set the optimum Focus.

Symptom of Misadjustment: If Focus Adjustment is incorrect, blurred images are shown on the display.

Test Point	Adj. Point	Mode	Input
---	Focus Control	RF	Mono-scope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below	

Note: Focus VR (FBT) --- Main CBA,
FBT= Fly Back Transformer

1. Operate the unit more than 30 minutes
2. Face the unit to the East and degauss the CRT using a degaussing coil.
3. Input the Monoscope Pattern.
4. Adjust the Focus Control on the FBT to obtain clear picture.

10. C-Trap Adjustment

Purpose: To get minimum leakage of the color signal carrier.

Symptom of Misadjustment: If C-Trap Adjustment is incorrect, stripes will appear on the screen.

Test point	Adj. Point	Mode	Input
D1311 Cathode (B-OUT)	CH ▲ / ▼ buttons	---	Color Bar
Tape	M. EQ.	Spec.	
---	Oscilloscope Pattern Generator	---	
Figure			

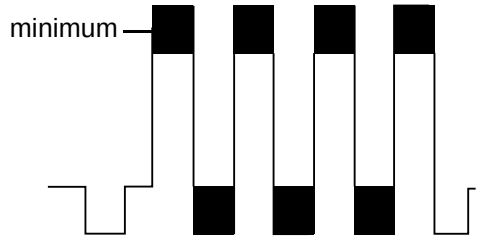


Fig. 4

Note: D1311 Cathode (B-Out)--- Main CBA

1. Connect Oscilloscope to D1311 Cathode.
2. Input a color bar signal from RF input.
   Enter the Service mode. (See page 1-7-1.)
3. Press "0" button on the remote control unit and select C-TRAP Mode.
4. Press "CH ▲ / ▼" buttons on the remote control unit so that the carrier leakage B-Out (3.58MHz) value becomes minimum on the oscilloscope.
5. Turn the power off and on again.

11. H fo Adjustment

Purpose: To get correct horizontal frequency.

Symptom of Misadjustment: If H f0 adjustment is in correct, skew distortion will appear on the screen.

Test Point	Adj. Point	Mode	Input
R1583	CH ▲ / ▼ button ["H-ADJ"] MODE		---
Tape	**M. EQ.**	**Spec.**	
---	Frequency Counter	15.734kHz±300Hz	

Note: R1583 --- Main CBA
Use Service remote control unit.

1. Connect Frequency Counter to R1583 and ground.
2. Set the unit to the VIDEO mode which is located before CH2 and no input is necessary. Enter the Service mode. (See page 1-7-1)
3. Operate the unit for at least 20 minutes.
4. Press "2" button on the Service remote control unit and select H-ADJ Mode.
5. Press "CH ▲ / ▼" button on the Service remote control unit so that the display will change "0" ~ "7." At this moment, Choose display one of them from "0" ~ "7" when the Frequency Counter shows 15.734 kHz±300Hz or closer.
6. Turn the power off and on again. (Main Power button on the TV unit.)

12. Y DL Time/Y SW LPF Adjustment

Purpose: To get minimum leakage of the color signal carrier.

Symptom of Misadjustment: If Y DL Time Adjustment is incorrect, stripes will appear on the screen.

1. Enter the Service Mode. (See page 1-7-1.)
2. **Y DL Time Adjustment:** Press "0" button on the service remote control unit twice to show "D-T" on the display.
   Y SW LPF Adjustment: Press "0" button on the service remote control unit four times to show "Y SW" on the display.
3. **Y DL Time Adjustment**: Select "2" by pressing "CH ▲ / ▼" buttons on the service remote control to enter Y DL Time Adjustment mode.
   Y SW LPF Adjustment: Select "0" by pressing "CH ▲ / ▼" buttons on the service remote control to enter Y SW LPF Adjustment mode.
4. If needed, perform the following.

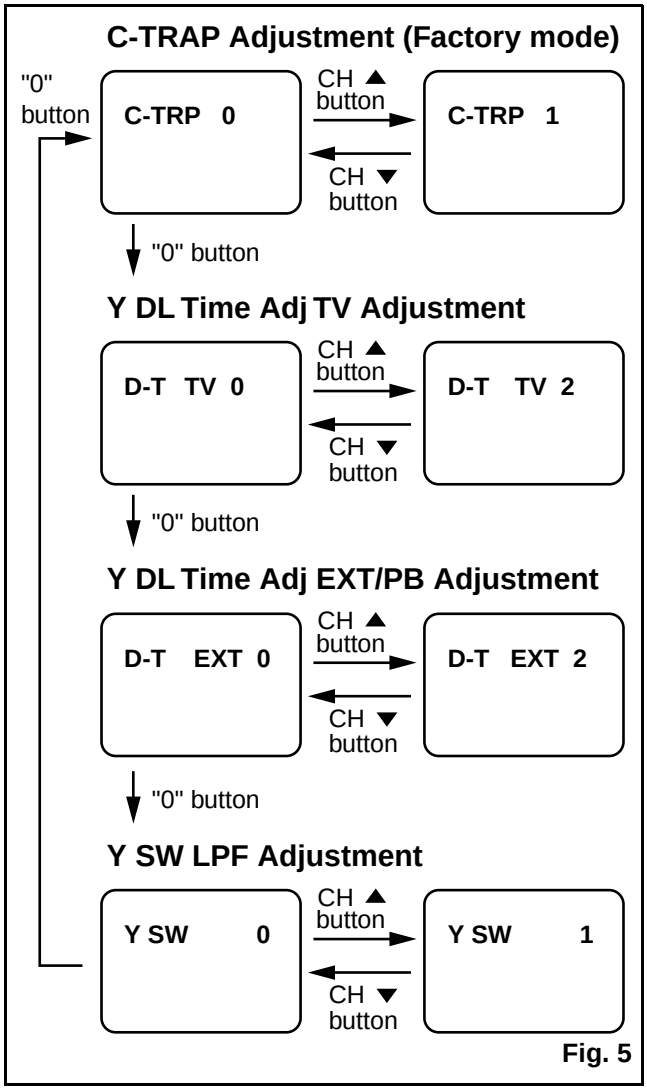


Fig. 5

13. Cut-off Adjustment

Purpose: To adjust the beam current of R, G, B, and screen voltage.

Symptom of Misadjustment: White color may be reddish, greenish or bluish.

Test Point	Adj. Point	Mode	Input
---	Screen-Control CH ▲ / ▼ buttons	RF	Black Raster
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See Reference Notes below.	
Figure			

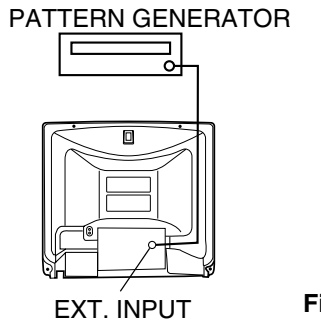


Fig. 6

Note: Screen Control FBT --- Main CBA
FBT= Fly Back Transformer
Use service remote control unit

1. Degauss the CRT and allow CRT to operate for 20 minutes before starting the alignment.
2. Input the Black Raster Signal from RF Input.
3. Enter the Service mode. (See page 1-7-1)
4. Press "VOL ▼" button on the service remote control unit and select "C/D" mode. (Display changes "C/D," "7F," "DVD-KEY," and "DVD-TEST" cyclically when "VOL ▼" button is pressed.) then press "1." The display will momentarily show "CUT OFF R" (R= Red.) Now there should be a horizontal line across the center of the picture tube. If needed gradually turn the screen control on the flyback, clockwise until the horizontal line appears. Adjust the Red Cut off by pressing the "CH ▲ / ▼" buttons. Proceed to Step 5 when the Red Cut off adjustment is done.
5. Press the "2" button. The display will momentarily show "CUT OFF G" (G=Green.) Adjust the Green Cut off by pressing the "CH ▲ / ▼" buttons. Proceed to step 6 when the Green Cut off adjustment is done.
6. Press the "3" button. The display will momentarily show "CUT OFF B" (B=Blue.) Adjust the Blue cut off by pressing the "CH ▲ / ▼" buttons. When done with steps 4, 5 and 6 the horizontal line should be pure white if not, then attempt the Cut off adjustment again.

The following 2 adjustments normally are not attempted in the field. They should be done only when replacing the CRT then adjust as a preparation.

14. Purity Adjustment

Purpose: To obtain pure color.

Symptom of Misadjustment: If Color Purity Adjustment is incorrect, large areas of color may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	Deflection Yoke Purity Magnet	---	*Red Color
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	
Figure			

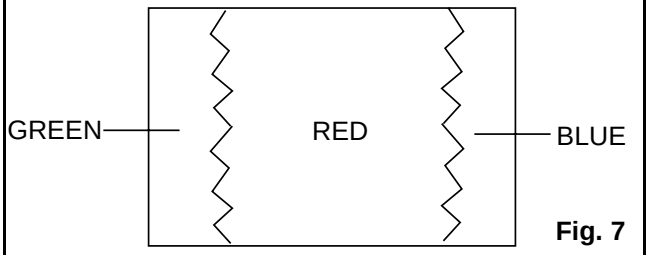


Fig. 7

* This becomes RED COLOR if push 7KEY with a service mode.

1. Set the unit facing east.
2. Operate the unit for over 30 minutes before adjusting.
3. Fully degauss the unit using an external degaussing coil.
4. Set the unit to the AUX Mode which is located before CH2 then input a red raster from video in.
5. Loosen the screw on the Deflection Yoke Clamper and pull the Deflection Yoke back away from the screen. (See Fig. 8.)
6. Loosen the Ring Lock and adjust the Purity Magnets so that a red field is obtained at the center of the screen. Tighten Ring Lock. (See Fig. 7,8.)
7. Slowly push the Deflection Yoke toward the bell of the CRT and set it where a uniform red field is obtained.
8. Tighten the clamp screw on the Deflection Yoke.

15. Convergence Adjustment

Purpose: To obtain proper convergence of red, green and blue beams.

Symptom of Misadjustment: If Convergence Adjustment is incorrect, the edge of white letters may have color edges.

Test point	Adj. Point	Mode	Input
---	C.P. Magnet (RB), C.P. Magnet (RB-G), Deflection Yoke	---	Dot Pattern or Crosshatch
Tape	M. EQ.	Spec.	
---	Pattern Generator	See below.	
Figure			

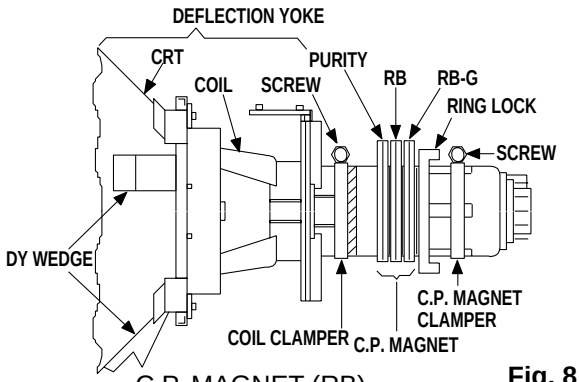


Fig. 8

C.P. MAGNET (RB)

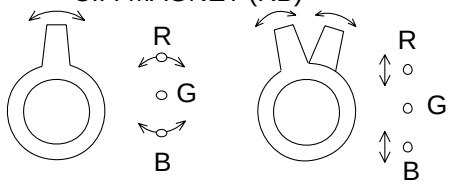


Fig. 9

C.P. MAGNET (RB-G)

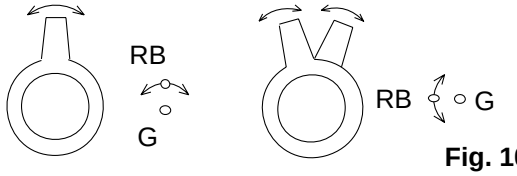


Fig. 10

1. Set the unit to the AUX Mode which is located before CH2 then input a Dot or crosshatch pattern.
2. Loosen the Ring Lock and align red with blue dots or Crosshatch at the center of the screen by rotating (RB) C.P. Magnets. (See Fig. 9.)
3. Align red / blue with green dots at the center of the screen by rotating (RB-G) C.P. Magnet. (See Fig. 10.)
4. Fix the C.P. Magnets by tightening the Ring Lock.
5. Remove the DY Wedges and slightly tilt the Deflection Yoke horizontally and vertically to obtain the best overall convergence.
6. Fix the Deflection Yoke by carefully inserting the DY Wedges between CRT and Deflection Yoke.

FIRMWARE RENEWAL MODE

1. Turn the power on and remove the disc on the tray.
2. To put the DVD player into version up mode, press [9], [8], [7], [6], and [SEARCH MODE] buttons on the remote control unit in that order. The tray will open automatically.
   Fig. a appears on the screen.

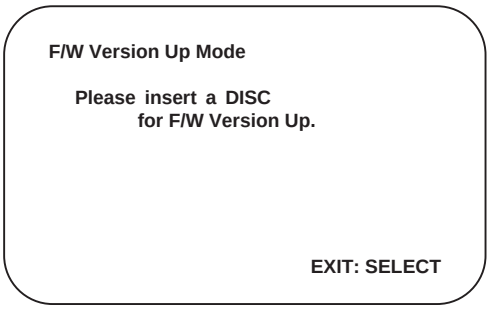


Fig. a Version Up Mode Screen

   The DVD player can also enter the version up mode with the tray open. In this case, Fig. a will be shown on the screen while the tray is open.
3. Load the disc for version up.
4. The DVD player enters the F/W version up mode automatically. Fig. b appears on the screen.

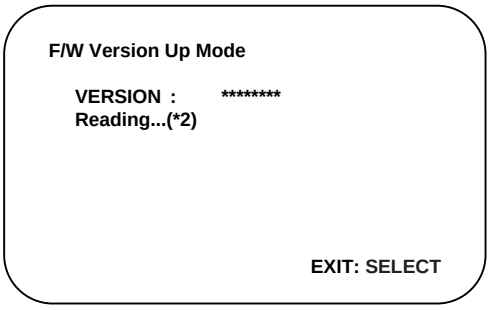


Fig. b Programming Mode Screen

   The appearance shown in (*2) of Fig. b is described as follows:

No.	Appearance	State
1	Reading...	Sending files into the memory
2	Erasing...	Erasing previous version data
3	Programming...	Writing new version data

5. After programming is finished, the tray opens automatically. Fig. c appears on the screen.

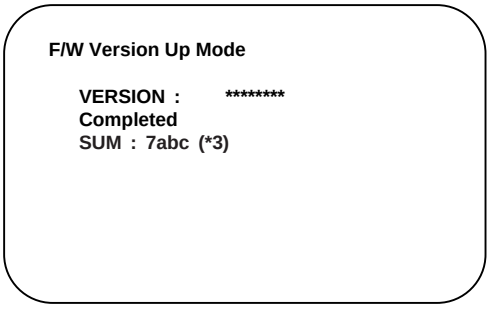


Fig. c Completed Program Mode Screen

   At this time, no buttons are available.
6. Unplug the AC cord from the AC outlet. Then plug it again.
7. Turn the power on by pressing the power button and the tray will close.
8. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. d appears on the screen.

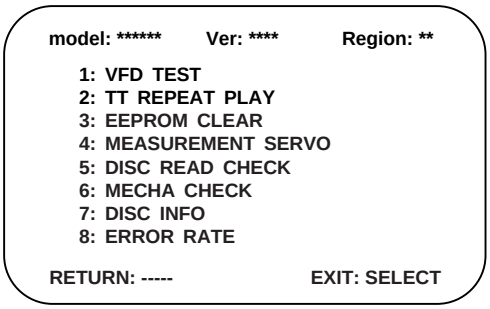


Fig. d

9. Press [3] button on the remote control unit.
   Fig. e appears on the screen.

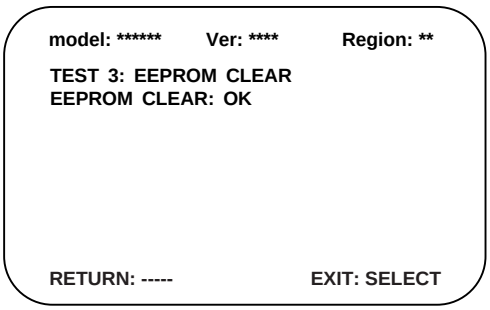
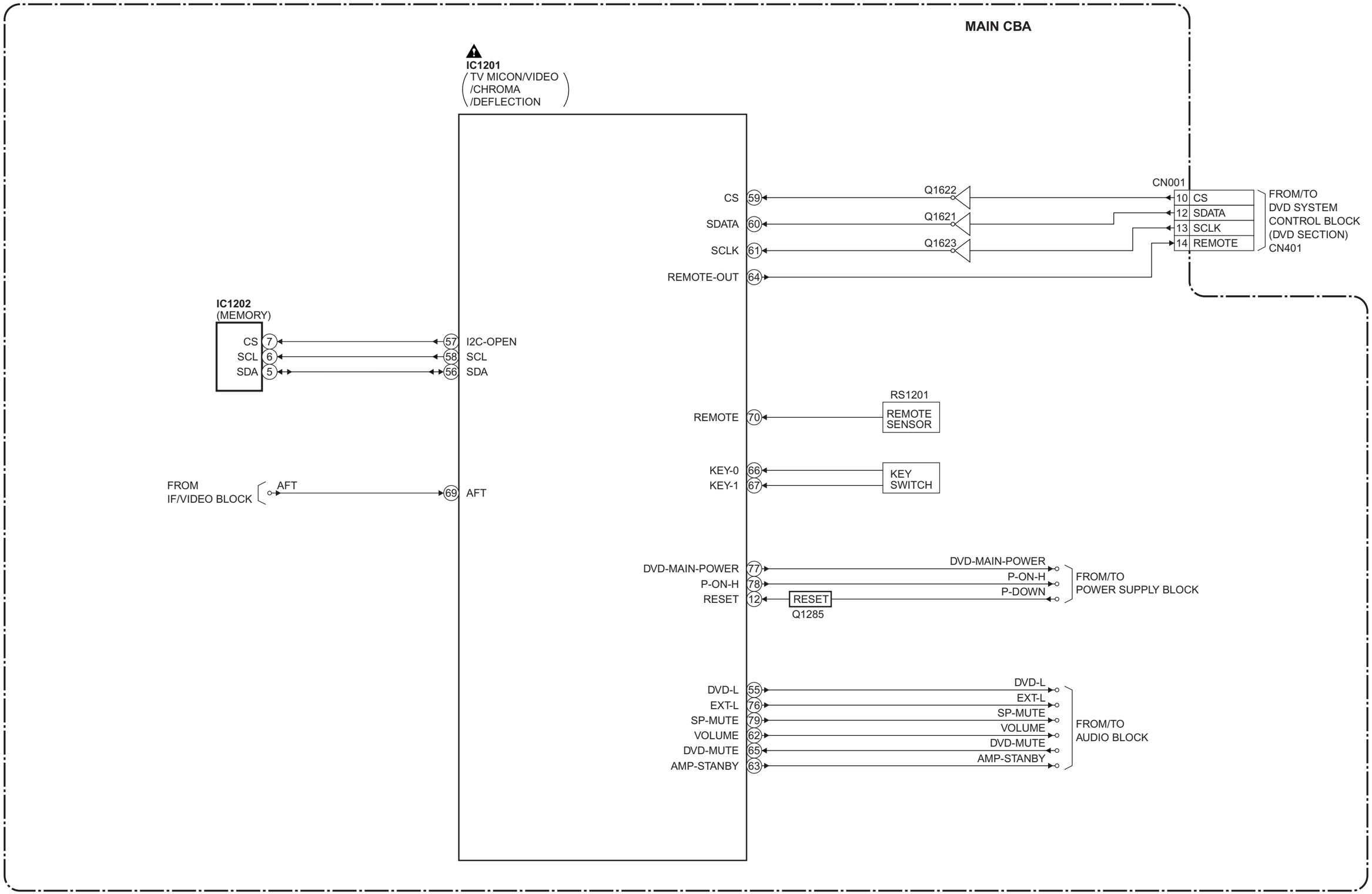


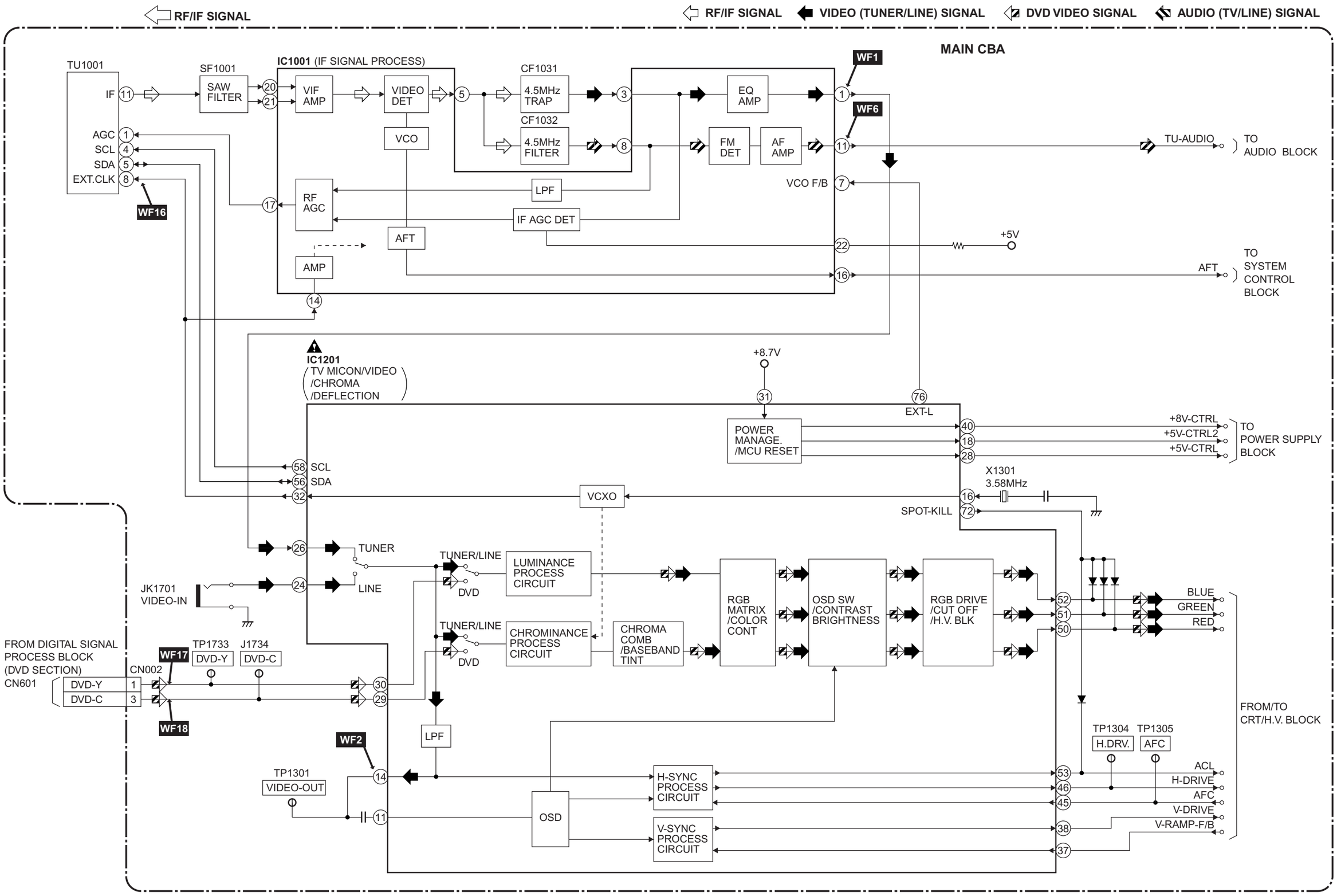
Fig. e

10. To finish this mode, press [POWER] button.

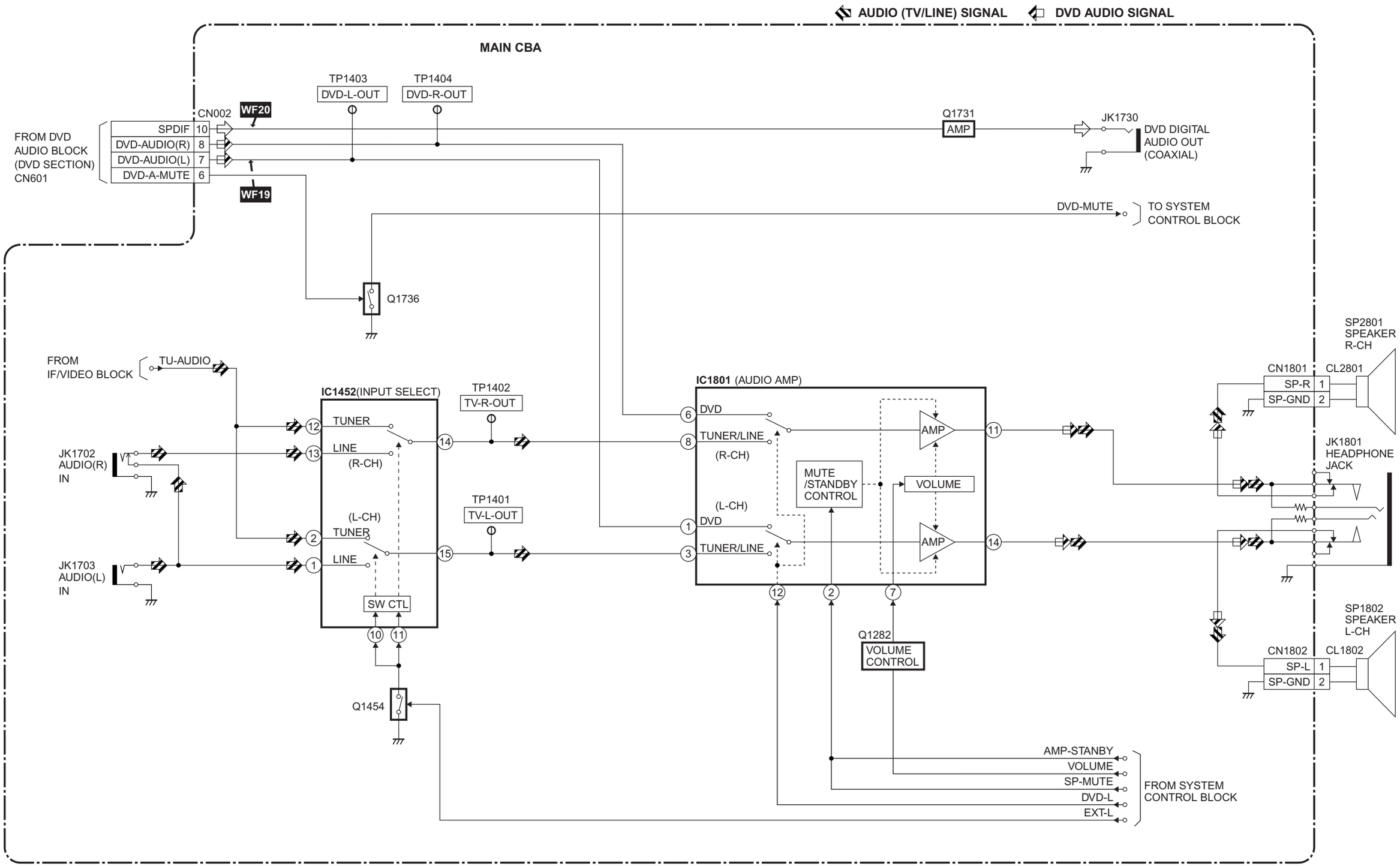
System Control Block Diagram



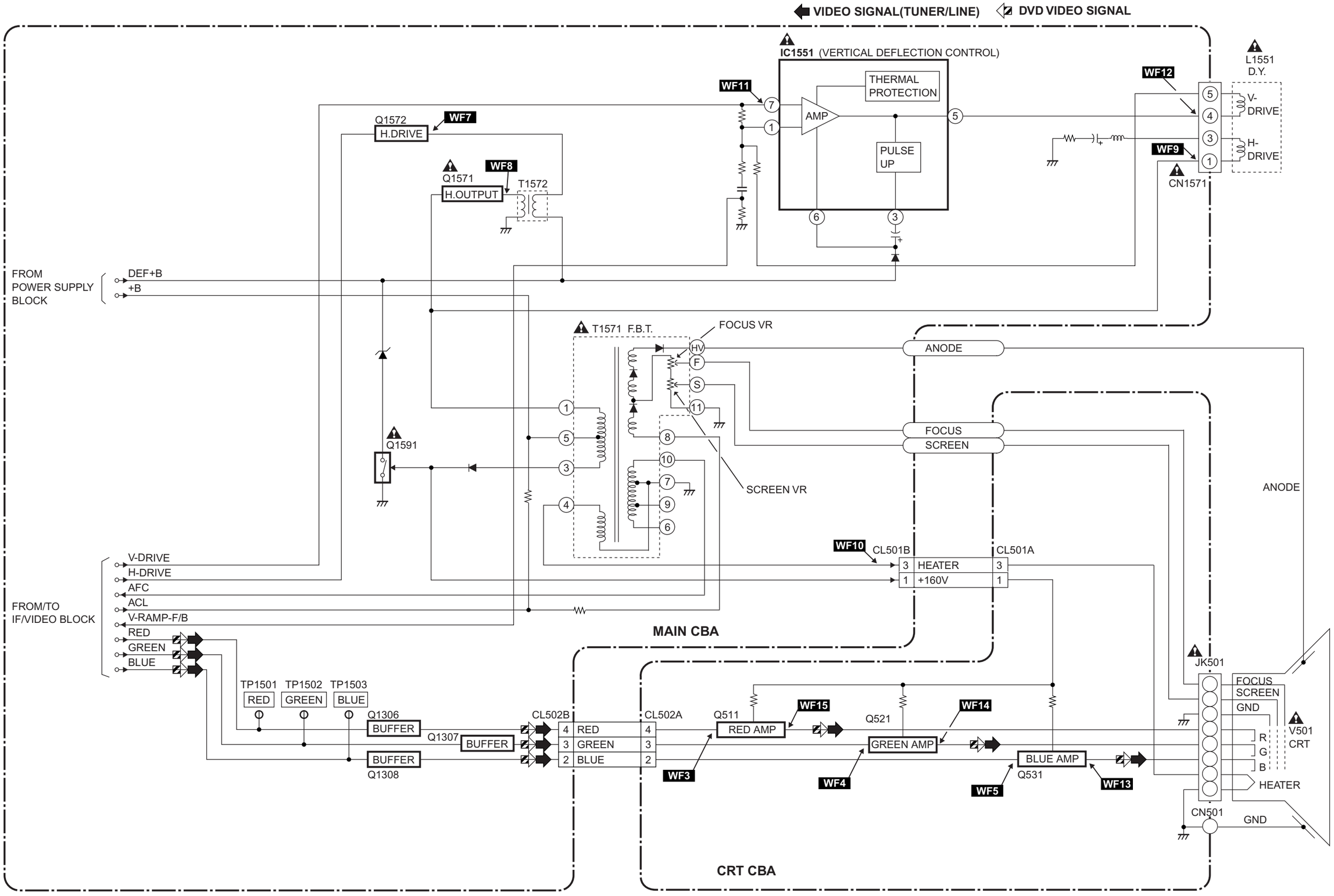
IF/Video Block Diagram



Audio Block Diagram



CRT/H.V. Block Diagram



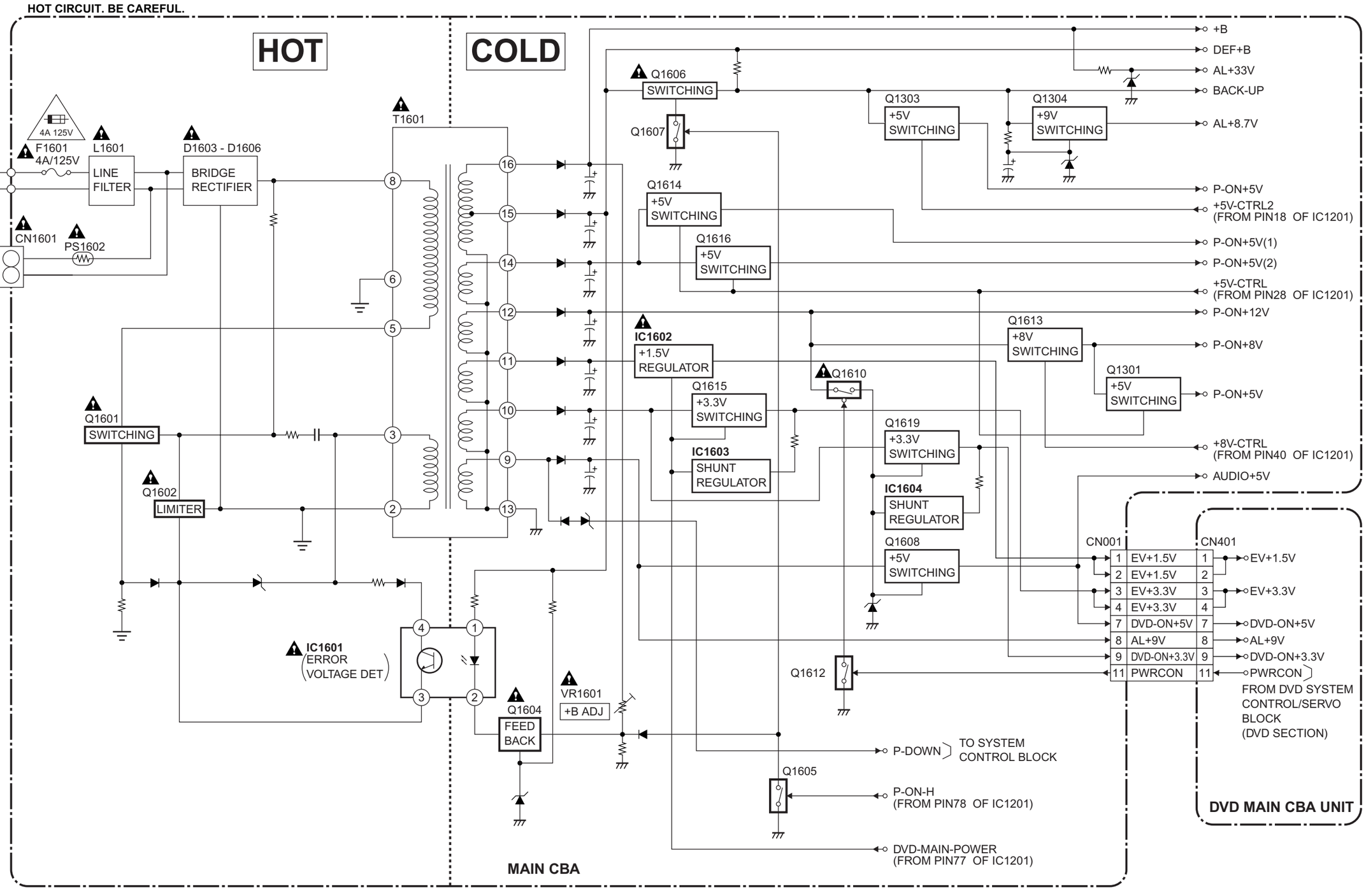
Power Supply Block Diagram

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

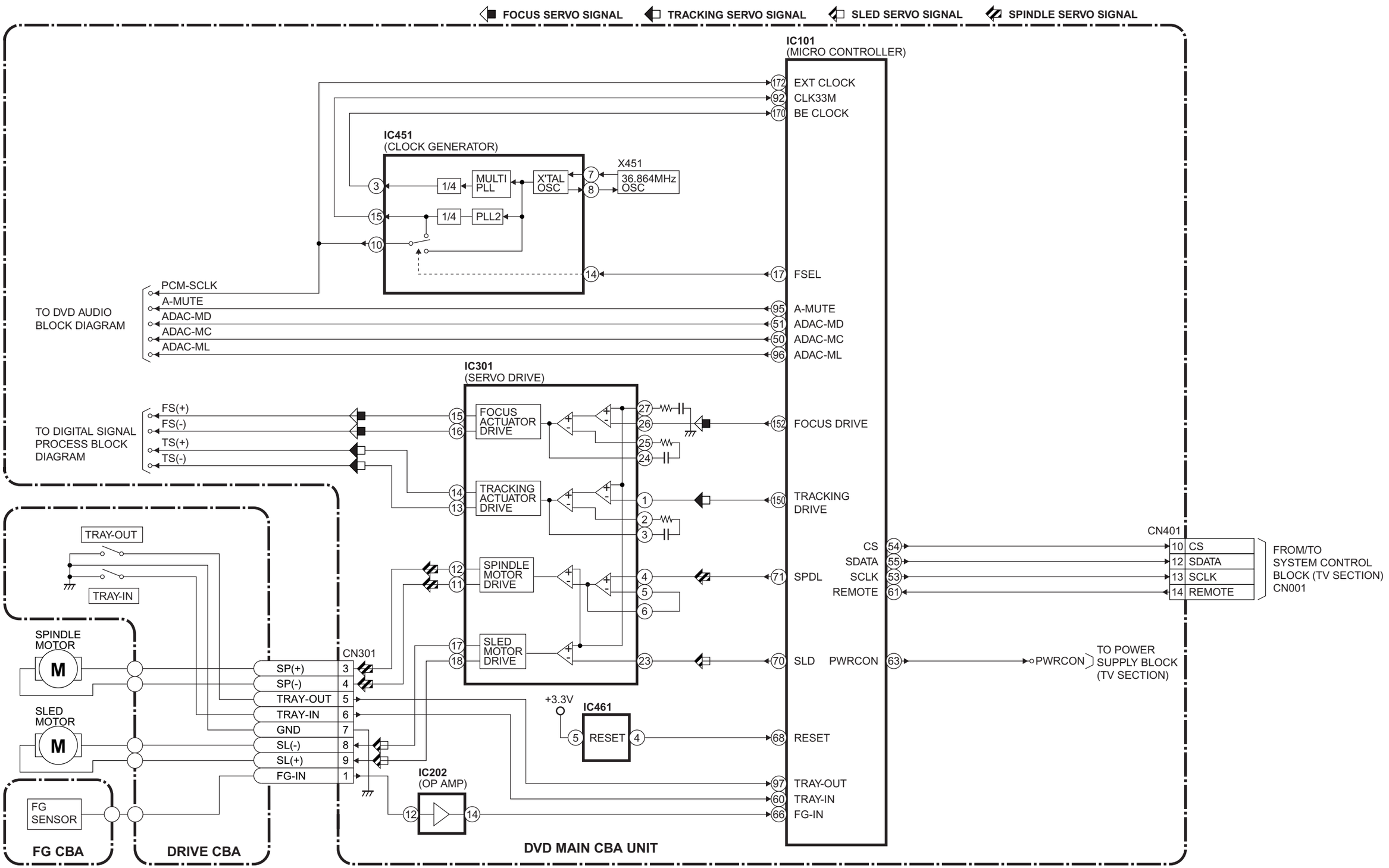
4A 125V

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4 A, 125V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 4A, 125V.

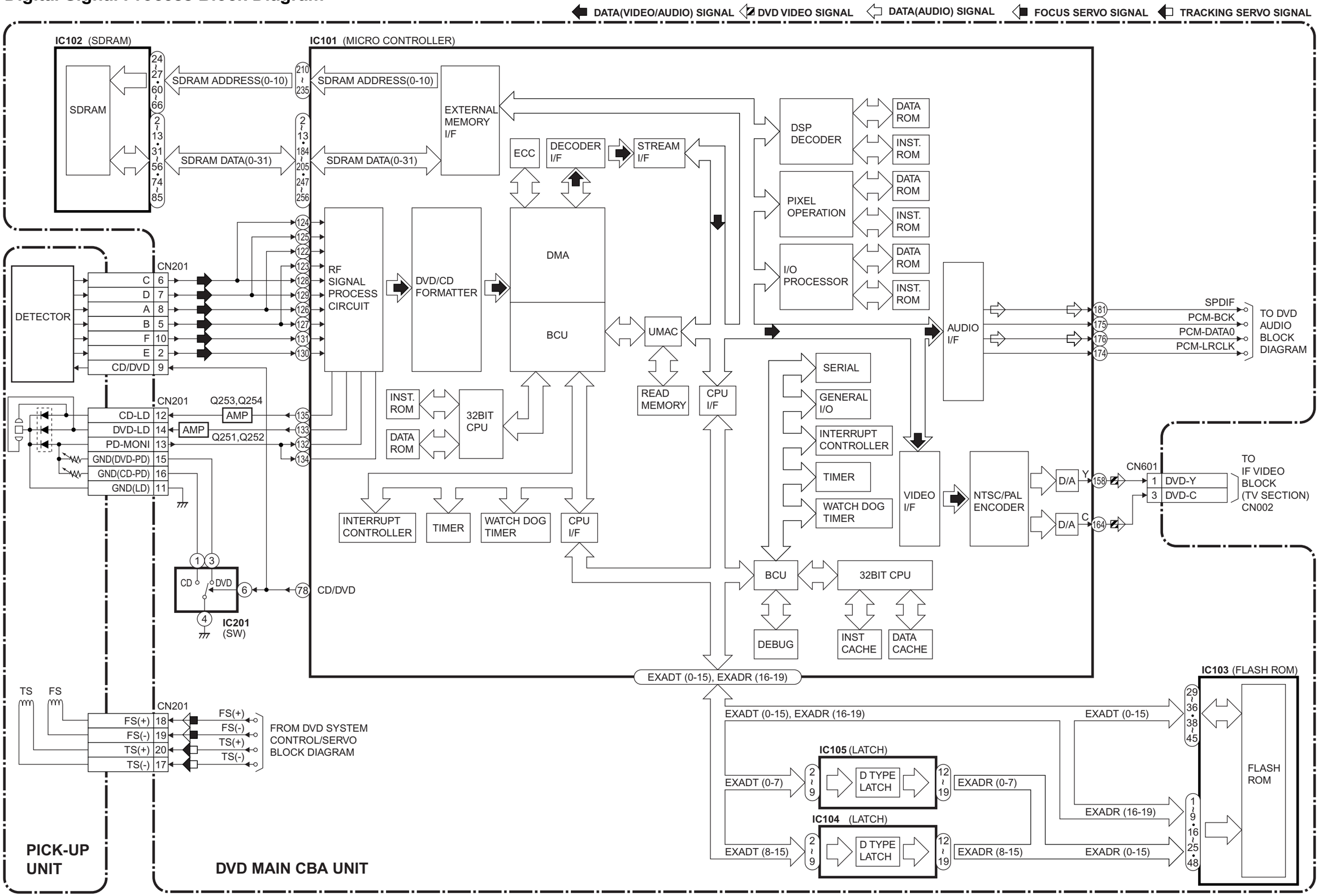
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



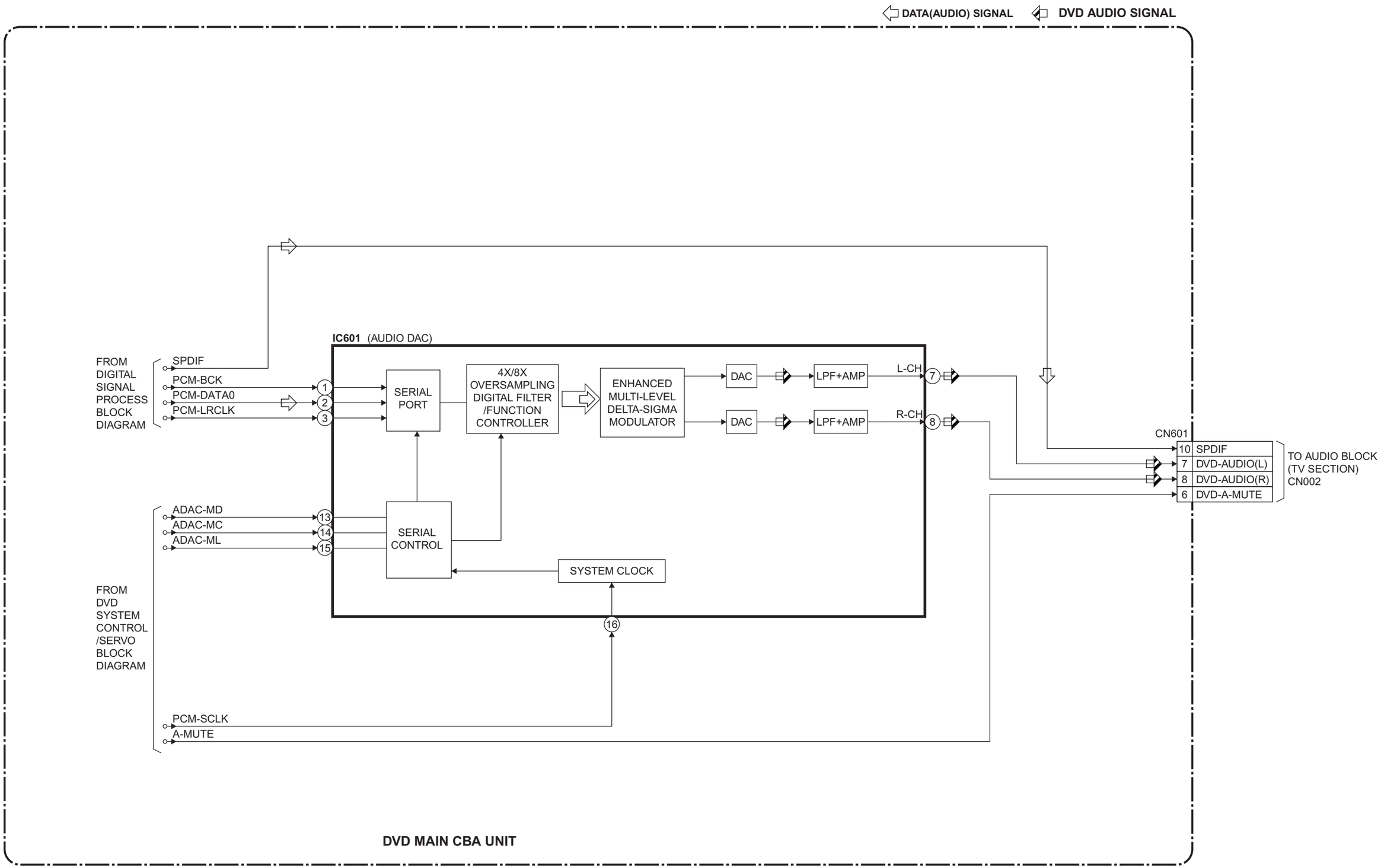
DVD System Control/Servo Block Diagram



Digital Signal Process Block Diagram



DVD Audio Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

Warning

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Capacitor Temperature Markings

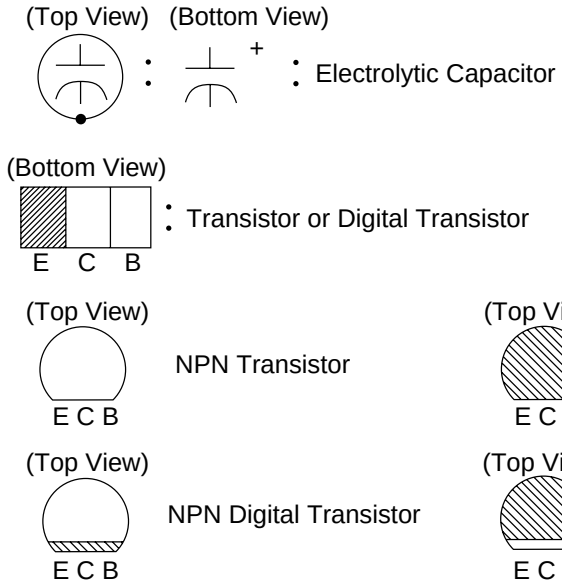
Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	+30 -80%	20°C	-25~+85°C
(SR)	±15%	20°C	-25~+85°C
(Z)	+30 -80%	20°C	-10~+70°C

Capacitors and transistors are represented by the following symbols.

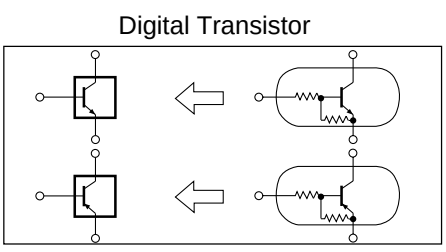
Note:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}\mu F$).
5. All voltages are DC voltages unless otherwise specified.

CBA Symbols



Schematic Diagram Symbols



LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE_A,_V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE_A,_V.

2. CAUTION:
Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

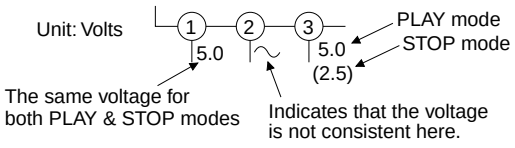
3. Note:
(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
(2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Wire Connectors
(1) Prefix symbol "CN" means "connector" (can disconnect and reconnect).
(2) Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).

5. Mode: SP/REC

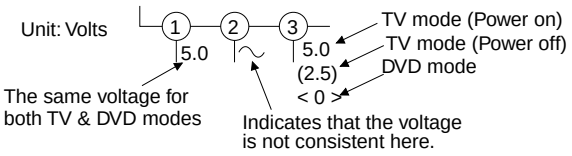
6. Voltage indications on the schematics are as shown below:
Plug the TV power cord into a standard AC outlet.:

< DVD Section >

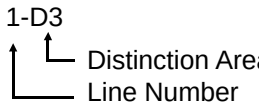


< TV Section >

Unit: Volts

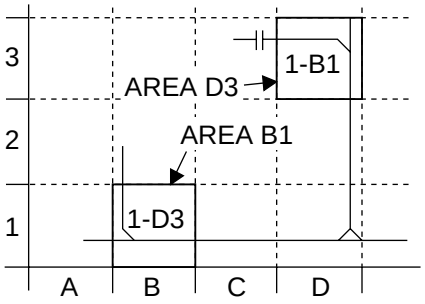


7. How to read converged lines



Examples:

1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



8. Test Point Information

: Indicates a test point with a jumper wire across a hole in the PCB.

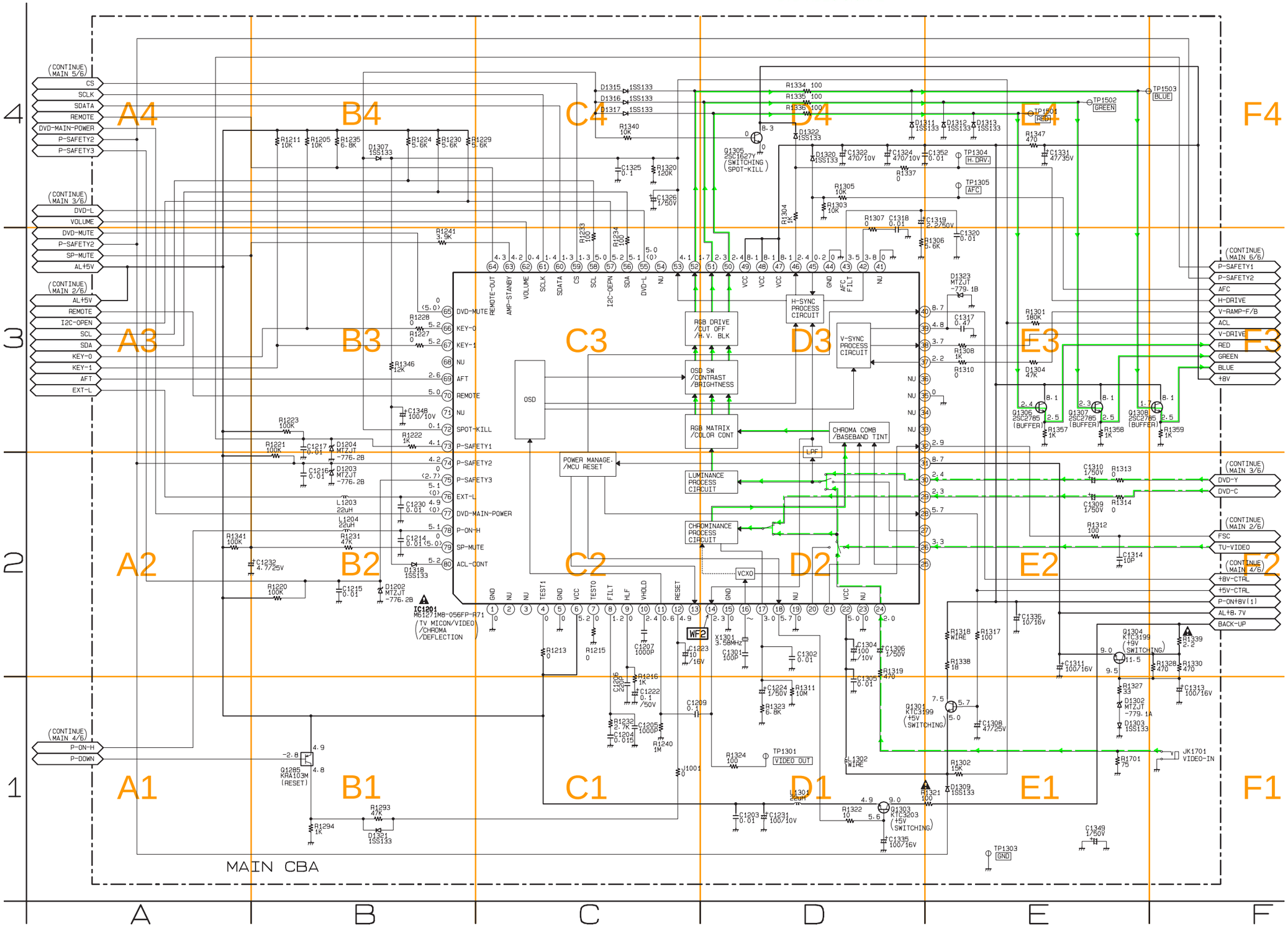
: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

Main 1/6 Schematic Diagram < TV Section >

VIDEO (TV/LINE) + DVD VIDEO SIGNAL
VIDEO (TV/LINE) SIGNAL
DVD VIDEO SIGNAL



MAIN 1/6

Ref No.	Position
IC	
IC1201	B-2
TRANSISTORS	
Q1285	B-1
Q1301	D-1
Q1303	D-1
Q1304	E-2
Q1305	D-4
Q1306	E-3
Q1307	E-3
Q1308	E-3
TEST POINTS	
TP1301	D-1
TP1303	E-1
TP1304	E-4
TP1305	E-4
TP1501	E-4
TP1502	E-4
TP1503	F-4

Main 2/6 Schematic Diagram < TV Section >

VIDEO (TV/LINE) SIGNAL

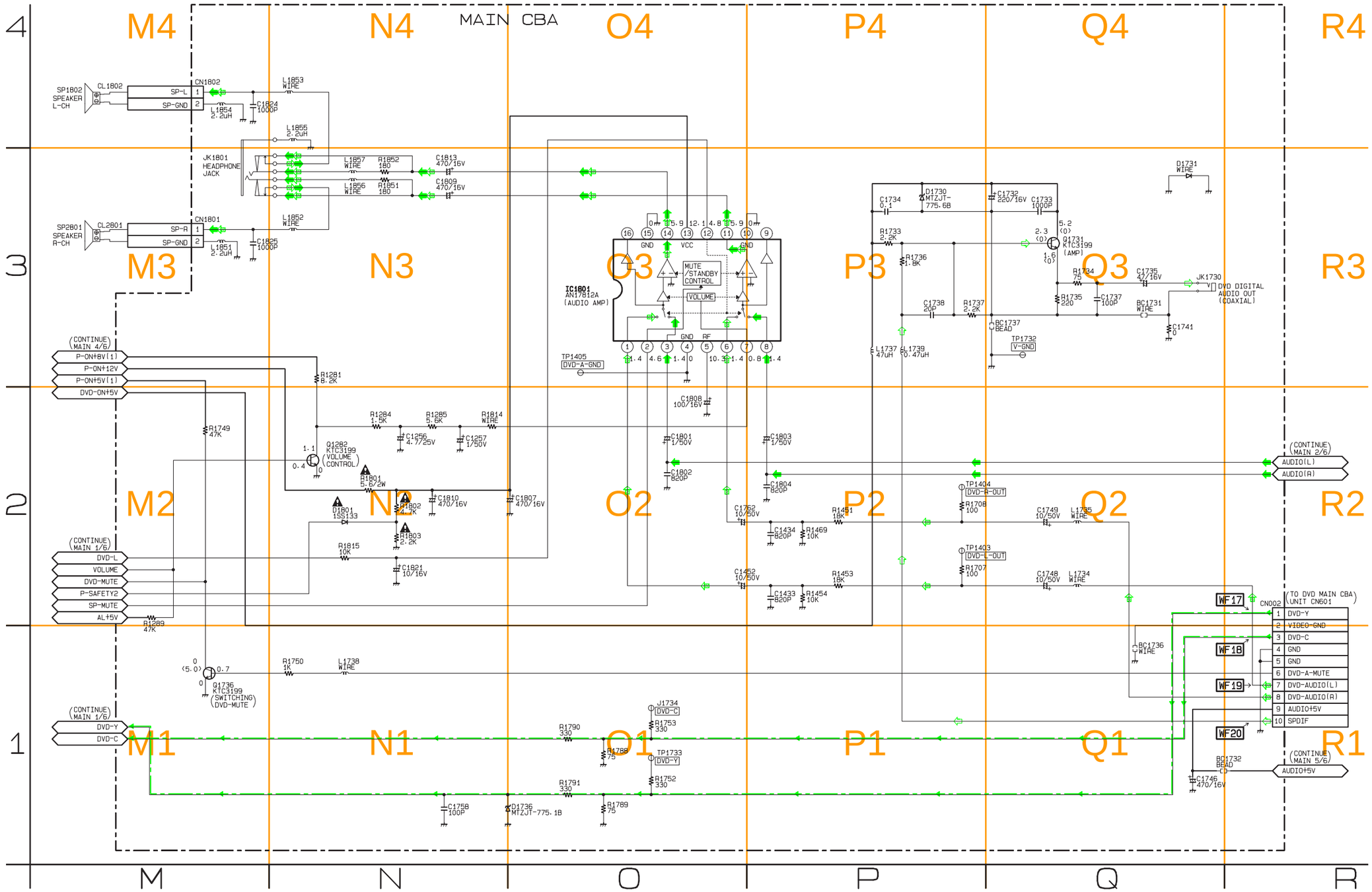
AUDIO (TV/LINE) SIGNAL

MAIN CBA

MAIN 2/6	
Ref No.	Position
ICS	
IC1001	J-3
IC1202	J-3
IC1452	H-1
TRANSISTOR	
Q1454	I-1
TEST POINTS	
TP1401	I-2
TP1402	I-2
TP1731	I-2

Main 3/6 Schematic Diagram < TV Section >

DVD VIDEO SIGNAL
AUDIO (TV/LINE) SIGNAL
DVD AUDIO SIGNAL
DATA (AUDIO) SIGNAL



MAIN 3/6

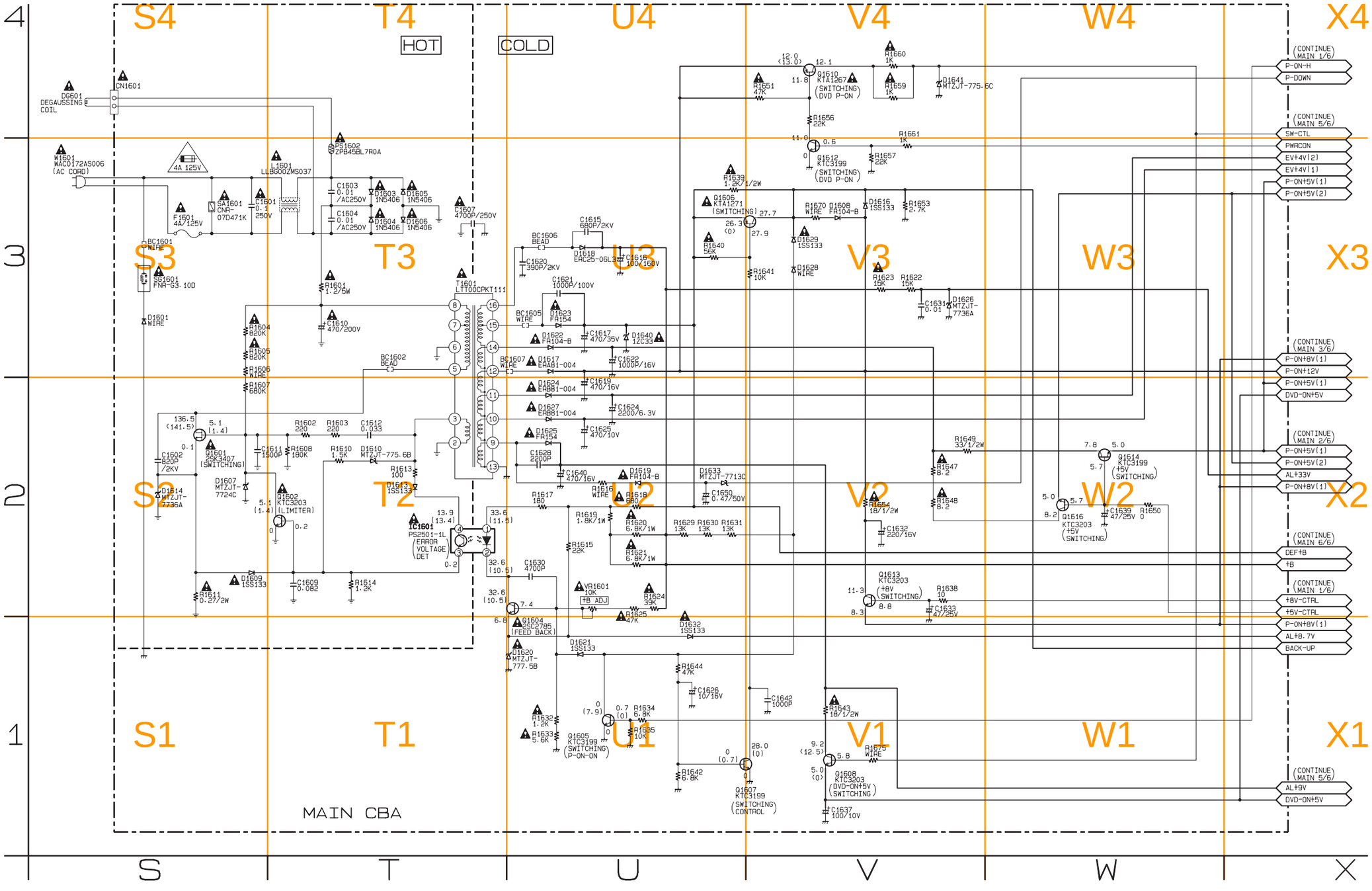
Ref No.	Position
IC	
IC1801	O-3
TRANSISTORS	
Q1282	N-2
Q1731	Q-3
Q1736	M-1
CONNECTORS	
CN002	R-2
CN1801	M-3
CN1802	M-4
TEST POINTS	
J1734	O-1
TP1403	P-2
TP1404	P-2
TP1405	O-3
TP1732	Q-3
TP1733	O-1

Main 4/6 Schematic Diagram < TV Section >

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4A, 125V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 4A, 125V.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



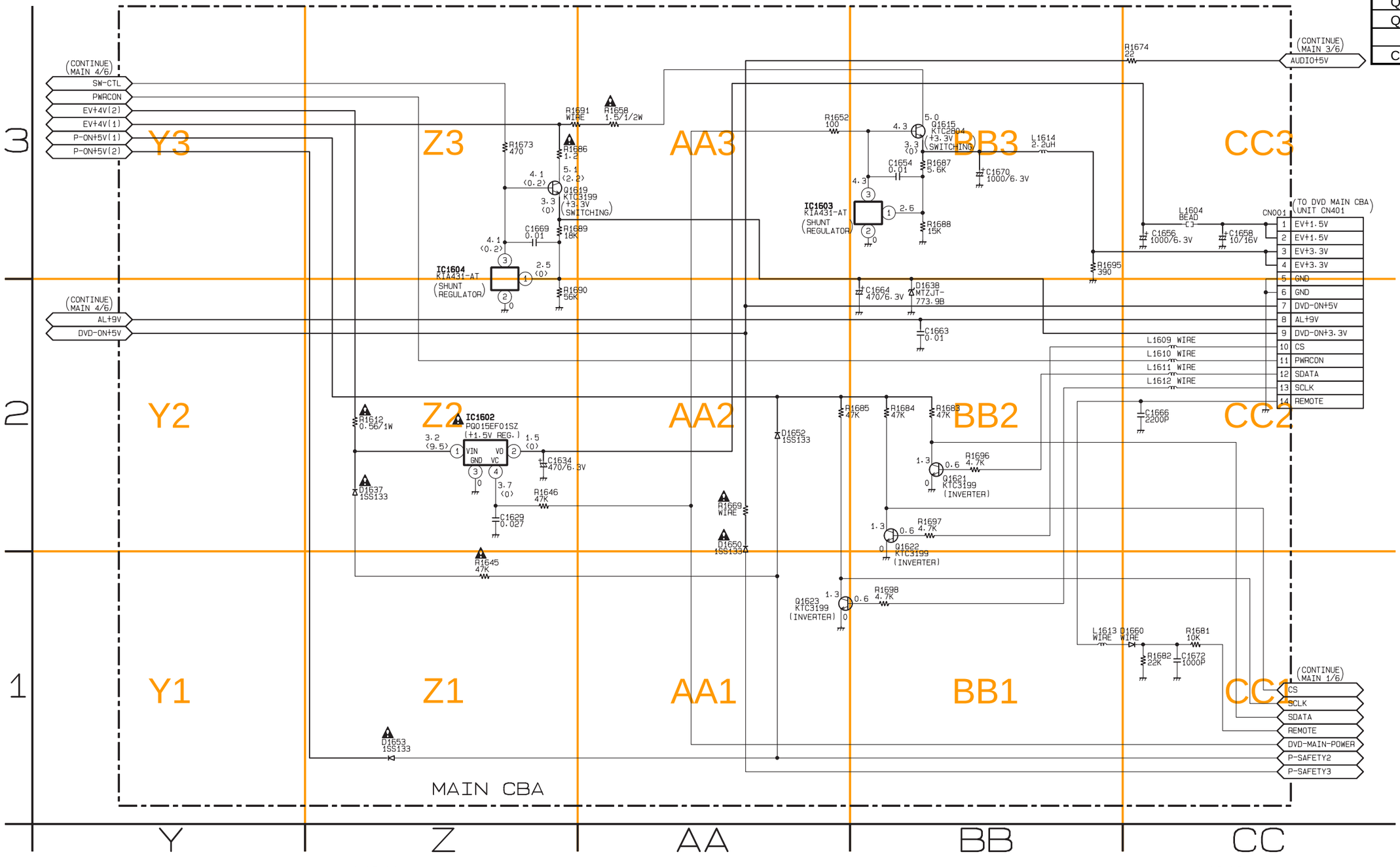
MAIN 4/6

Ref No.	Position
IC	
IC1601	T-2
TRANSISTORS	
Q1601	S-2
Q1602	T-2
Q1604	U-1
Q1605	U-1
Q1606	U-3
Q1607	V-1
Q1608	V-1
Q1610	V-4
Q1612	V-3
Q1613	V-2
Q1614	W-2
Q1616	W-2
CONNECTOR	
CN1601	S-4
VARIABLE RESISTOR	
VR1601	U-2

Main 5/6 Schematic Diagram < TV Section >

MAIN 5/6

Ref No.	Position
ICS	
IC1602	Z-2
IC1603	AA-3
IC1604	Z-3
TRANSISTORS	
Q1615	BB-3
Q1619	Z-3
Q1621	BB-2
Q1622	BB-2
Q1623	AA-1
CONNECTORS	
CN001	CC-3



Main 6/6 & CRT Schematic Diagram < TV Section >

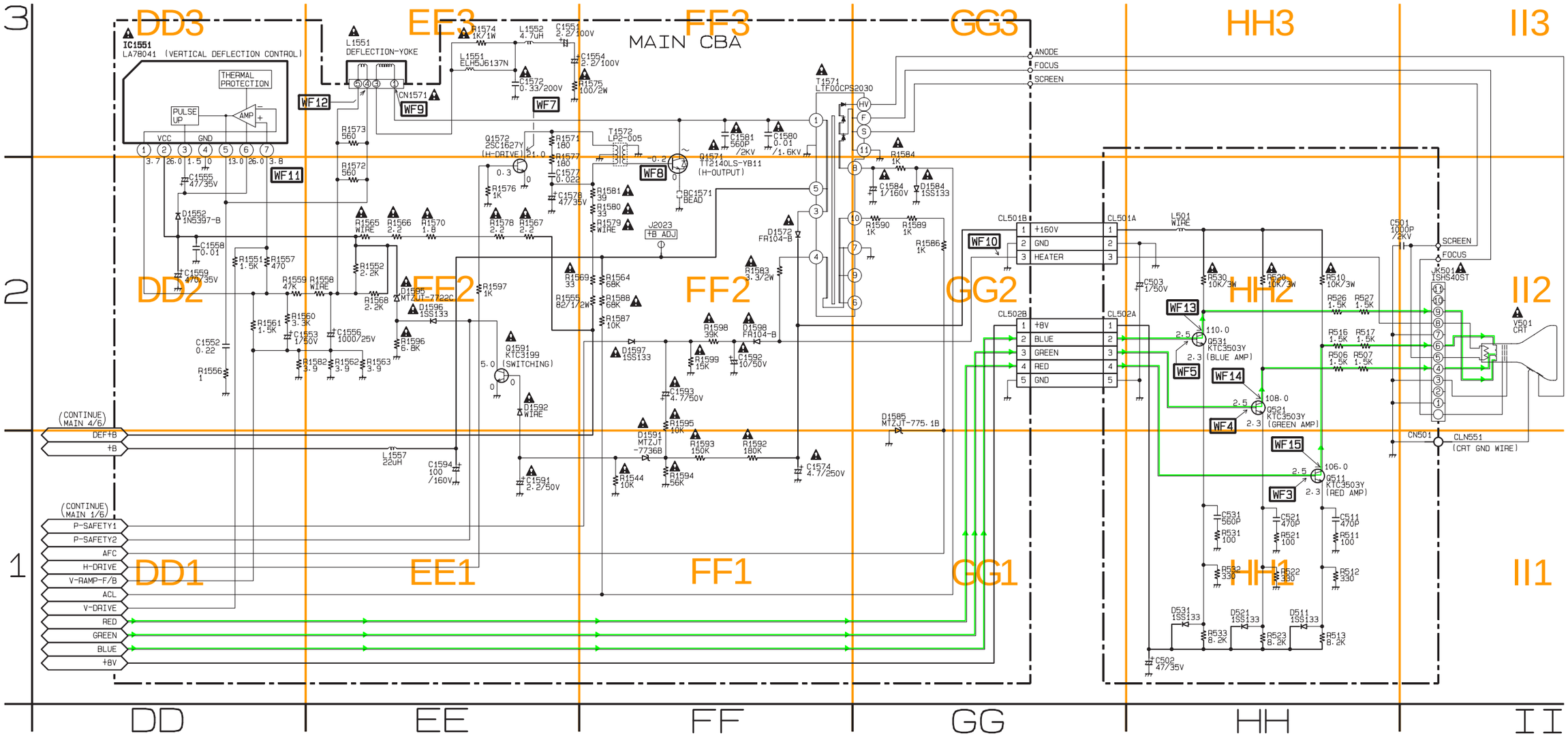
MAIN 6/6

Ref No.	Position
IC	
IC1551	DD-3
TRANSISTORS	
Q1571	FF-2
Q1572	EE-3
Q1591	EE-2
CONNECTORS	
CL501B	GG-2
CL502B	GG-2
CN1571	EE-3
TEST POINTS	
J2023	FF-2

CRT

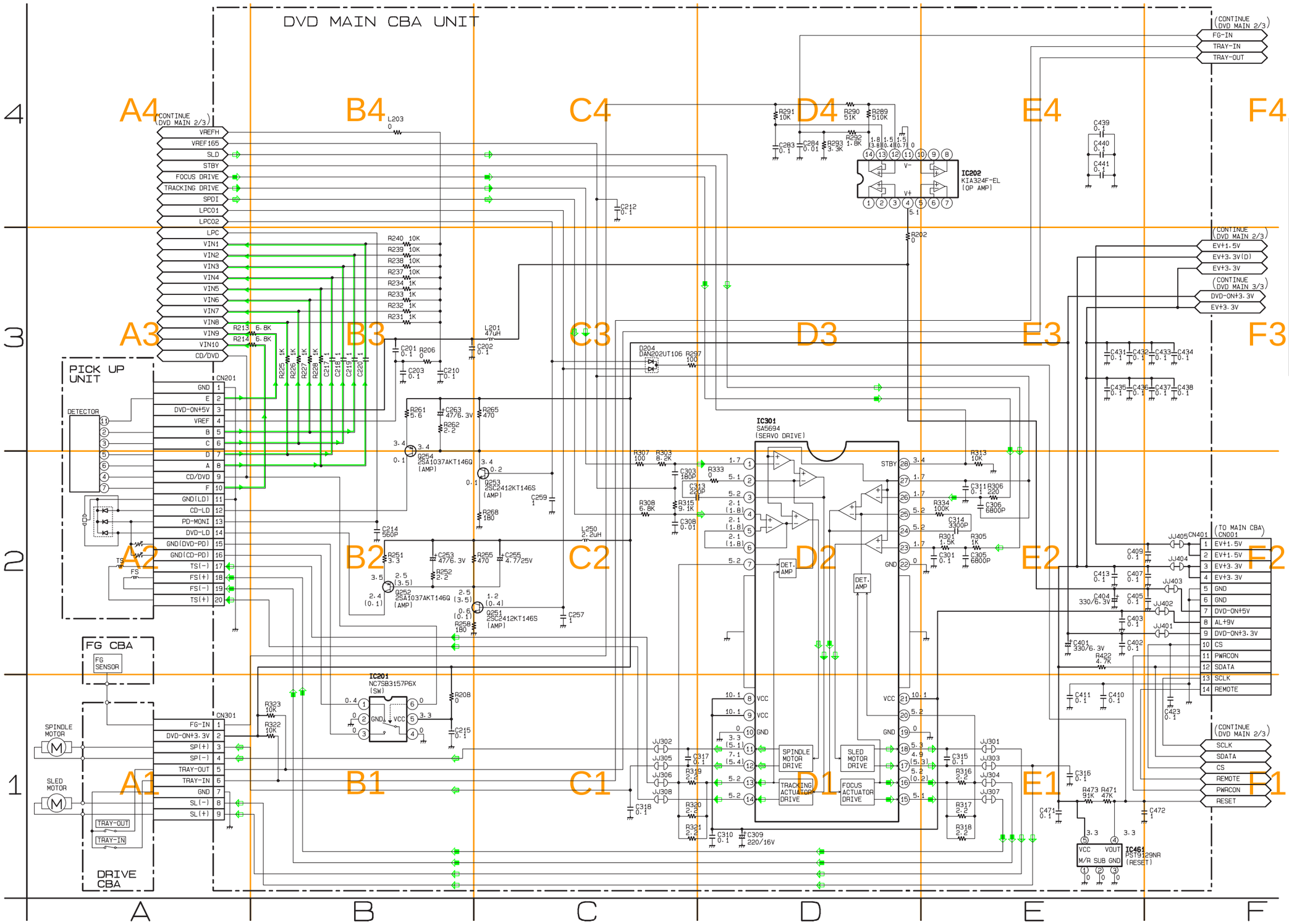
Ref No.	Position
TRANSISTORS	
Q511	HH-2
Q521	HH-2
Q531	HH-2
CONNECTORS	
CN501	II-1
CL501A	GG-2
CL502A	GG-2

VIDEO (TV/LINE) + DVD VIDEO SIGNAL



DVD Main 1/3 Schematic Diagram < DVD Section >

DATA(VIDEO+AUDIO)　FOCUS SERVO SIGNAL　TRACKING SERVO SIGNAL　SPINDLE SERVO SIGNAL　SLED SERVO SIGNAL



DVD MAIN 1/3

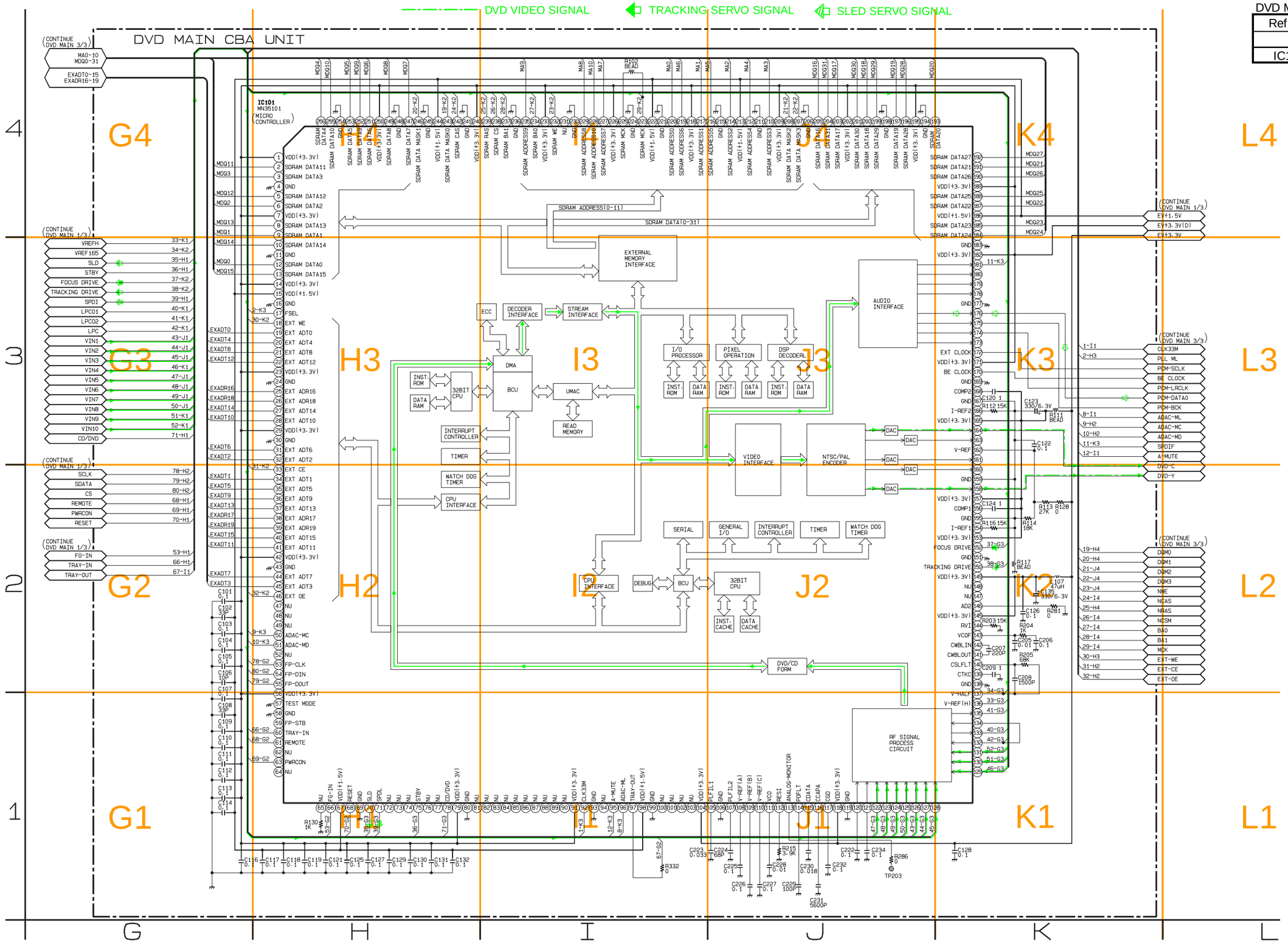
Ref No.	Position
ICS	
IC201	B-1
IC202	E-4
IC301	D-3
IC461	E-1
TRANSISTORS	
Q251	C-2
Q252	B-2
Q253	C-2
Q254	B-2
CONNECTORS	
CN201	A-3
CN301	A-1
CN401	F-2

DVD Main 2/3 Schematic Diagram < DVD Section >

DATA(VIDEO+AUDIO)
DVD VIDEO SIGNAL
FOCUS SERVO SIGNAL
TRACKING SERVO SIGNAL
SPINDLE SERVO SIGNAL
SLED SERVO SIGNAL
DATA (AUDIO) SIGNAL

DVD MAIN 2/3

Ref No.	Position
IC	
IC101	H-4

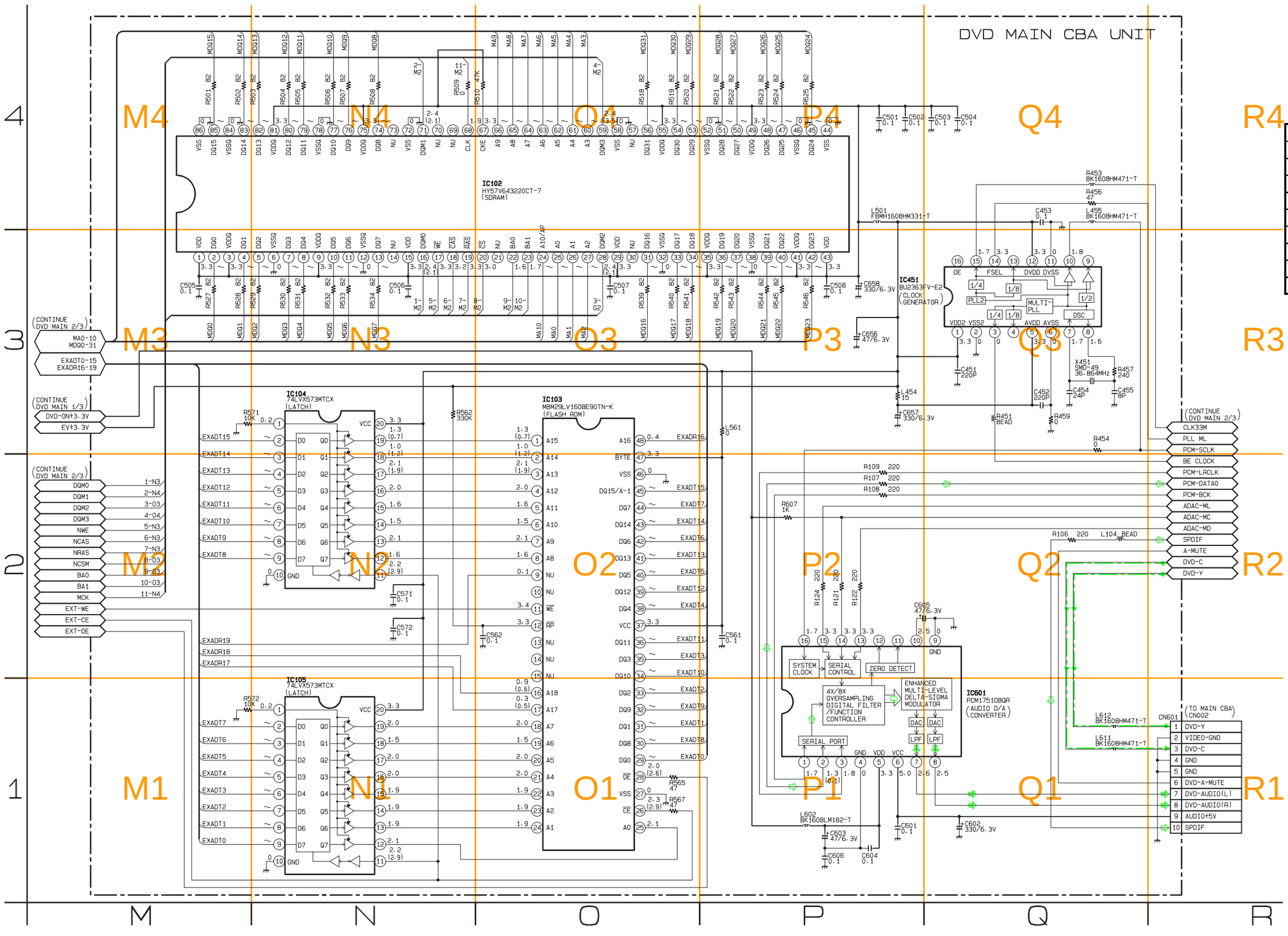


IC101 VOLTAGE CHART

PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP
1	3.3	3.3	33	2.2	2.9	65	0.1	0.1	97	3.4	3.4	129	2.0	2.0	161	-----	-----	193	~	~	225	1.9	1.9
2	~	~	34	~	~	66	1.2	2.5	98	1.6	1.6	130	2.2	2.2	162	1.4	1.4	194	0	0	226	3.3	3.3
3	~	~	35	~	~	67	1.6	1.6	99	0	0	131	2.3	2.3	163	-----	-----	195	3.3	3.3	227	~	~
4	0	0	36	~	~	68	3.4	3.4	100	-----	-----	132	0.4	0.1	164	0.9	0.9	196	~	~	228	~	~
5	~	~	37	~	~	69	0	0	101	-----	-----	133	1.2	0.4	165	3.3	3.3	197	~	~	229	~	~
6	~	~	38	0.3	0.5	70	1.7	1.7	102	-----	-----	134	0.4	0.1	166	1.5	1.5	198	0	0	230	0	0
7	3.3	3.3	39	0.1	0.1	71	2.4	1.7	103	-----	-----	135	0.2	0.2	167	0	0	199	~	~	231	-----	-----
8	~	~	40	~	~	72	-----	-----	104	3.3	3.3	136	2.3	2.3	168	2.1	2.1	200	~	~	232	3.3	3.3
9	~	~	41	~	~	73	-----	-----	105	0.9	0.9	137	1.7	1.7	169	0	0	201	~	~	233	3.3	3.3
10	~	~	42	3.3	3.3	74	-----	-----	106	0	0	138	0	0	170	0.8	0.8	202	3.3	3.3	234	1.6	1.6
11	0	0	43	0	0	75	3.4	3.4	107	0.8	0.8	139	1.7	1.7	171	3.3	3.3	203	~	~	235	~	~
12	~	~	44	~	~	76	-----	-----	108	1.6	1.6	140	1.7	1.7	172	1.6	1.6	204	~	~	236	0	0
13	~	~	45	~	~	77	-----	-----	109	2.1	2.1	141	1.7	1.7	173	-----	-----	205	~	~	237	1.7	1.7
14	3.3	3.3	46	2.0	2.6	78	0.1	0.1	110	2.6	2.6	142	1.7	1.7	174	1.8	1.8	206	0	0	238	3.0	3.0
15	1.5	1.5	47	-----	-----	79	3.3	3.3	111	2.0	2.0	143	0.5	0.5	175	1.7	1.7	207	2.4	3.5	239	3.3	3.3
16	0	0	48	-----	-----	80	0	0	112	0.7	0.9	144	1.6	1.6	176	1.4	0.1	208	2.4	2.1	240	3.3	3.3
17	3.4	3.4	49	-----	-----	81	-----	-----	113	2.1	2.1	145	3.3	3.3	177	0	0	209	3.3	3.3	241	0	0
18	3.4	3.4	50	3.4	3.4	82	-----	-----	114	1.8	1.8	146	1.8	1.8	178	-----	-----	210	~	~	242	3.2	3.2
19	~	~	51	3.4	3.4	83	-----	-----	115	1.4	1.4	147	-----	-----	179	-----	-----	211	0	0	243	2.4	2.1
20	~	~	52	-----	-----	84	-----	-----	116	0.3	0.3	148	-----	-----	180	-----	-----	212	~	~	244	1.5	1.5
21	~	~	53	3.4	3.4	85	-----	-----	117	1.6	1.6	149	3.3	3.3	181	1.7	1.7	213	1.5	1.5	245	0	0
22	~	~	54	3.4	3.4	86	-----	-----	118	3.3	3.3	150	1.7	1.7	182	3.3	3.3	214	~	~	246	2.4	2.1
23	3.3	3.3	55	3.3	3.3	87	-----	-----	119	0	0	151	0	0	183	0	0	215	0	0	247	~	~
24	0	0	56	3.3	3.3	88	-----	-----	120	1.9	1.9	152	1.7	1.7	184	~	~	216	~	~	248	0	0
25	0.4	0.4	57	0	0	89	-----	-----	121	1.9	1.9	153	3.3	3.3	185	~	~	217	~	~	249	~	~
26	0.9	0.6	58	0	0	90	-----	-----	122	2.4	2.4	154	1.4	1.4	186	1.5	1.5	218	3.3	3.3	250	3.3	3.3
27	~	~	59	-----	-----	91	3.3	3.3	123	2.4	2.4	155	0	0	187	~	~	219	~	~	251	~	~
28	~	~	60	3.4	3.4	92	1.7	1.5	124	2.4	2.4	156	2.2	2.2	188	~	~	220	~	~	252	~	~
29	3.3	3.3	61	3.1	3.1	93	0	0	125	2.4	2.4	157	3.3	3.3	189	3.3	3.3	221	0	0	253	~	~
30	0	0	62	-----	-----	94	-----	-----	126	2.0	2.0	158	0.7	0.7	190	~	~	222	1.5	1.5	254	0	0
31	~	~	63	3.4	3.4	95	3.4	0.1	127	2.0	2.0	159	0	0	191	~	~	223	1.9	1.9	255	~	~
32	~	~	64	-----	-----	96	3.4	3.4	128	2.0	2.0	160	-----	-----	192	~	~	224	0	0	256	~	~

DVD Main 3/3 Schematic Diagram < DVD Section >

DVD VIDEO SIGNAL DATA (AUDIO) SIGNAL DVD AUDIO SIGNAL



DVD MAIN 3/3

Ref No.	Position
ICS	
IC102	O-4
IC103	O-3
IC104	N-3
IC105	N-1
IC451	P-3
IC601	Q-1
CONNECTOR	
CN601	R-1

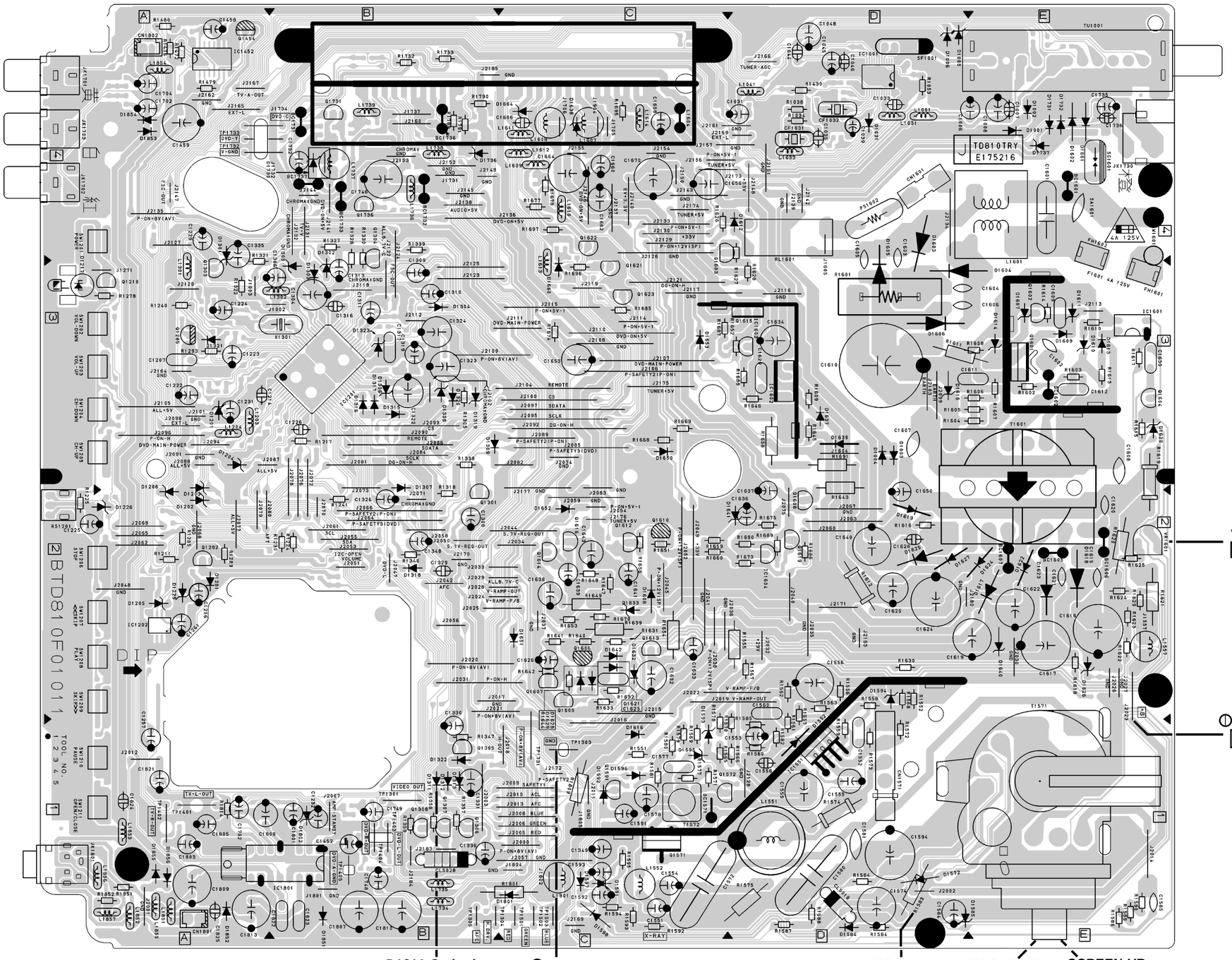
Main CBA Top View < TV Section >

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4A, 125V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 4A, 125V.

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



MAIN CBA

Ref No.	Position	Ref No.	Position
ICS		TRANSISTORS	
IC1001	D-4	Q1616	C-2
IC1201	B-3	Q1619	D-2
IC1202	A-2	Q1621	C-3
IC1452	A-4	Q1622	C-4
IC1551	D-1	Q1623	C-3
IC1601	E-3	Q1731	B-4
IC1602	D-3	Q1736	B-4
IC1603	D-3	CONNECTORS	
IC1604	D-2	CL501B	D-1
IC1801	B-1	CL502B	B-1
TRANSISTORS		CN001	C-4
Q1282	A-2	CN002	B-4
Q1285	A-3	CN1571	D-1
Q1301	B-2	CN1601	D-4
Q1303	A-3	CN1801	A-1
Q1304	B-4	CN1802	A-4
Q1305	B-1	TEST POINTS	
Q1306	B-1	J1734	B-4
Q1307	B-1	J2023	E-2
Q1308	B-1	TP1301	B-1
Q1454	A-4	TP1303	C-1
Q1571	C-1	TP1304	C-1
Q1572	C-1	TP1305	B-1
Q1591	C-1	TP1401	A-1
Q1601	E-3	TP1402	A-1
Q1602	E-3	TP1403	B-1
Q1604	E-3	TP1404	B-1
Q1605	C-2	TP1405	B-1
Q1606	C-2	TP1501	C-1
Q1607	C-2	TP1502	C-1
Q1608	D-2	TP1503	C-1
Q1610	C-2	TP1731	C-1
Q1612	C-2	TP1732	A-4
Q1613	C-2	TP1733	A-4
Q1614	C-2	VARIABLE RESISTOR	
Q1615	D-3	VR1601	E-2

Main CBA Bottom View < TV Section >

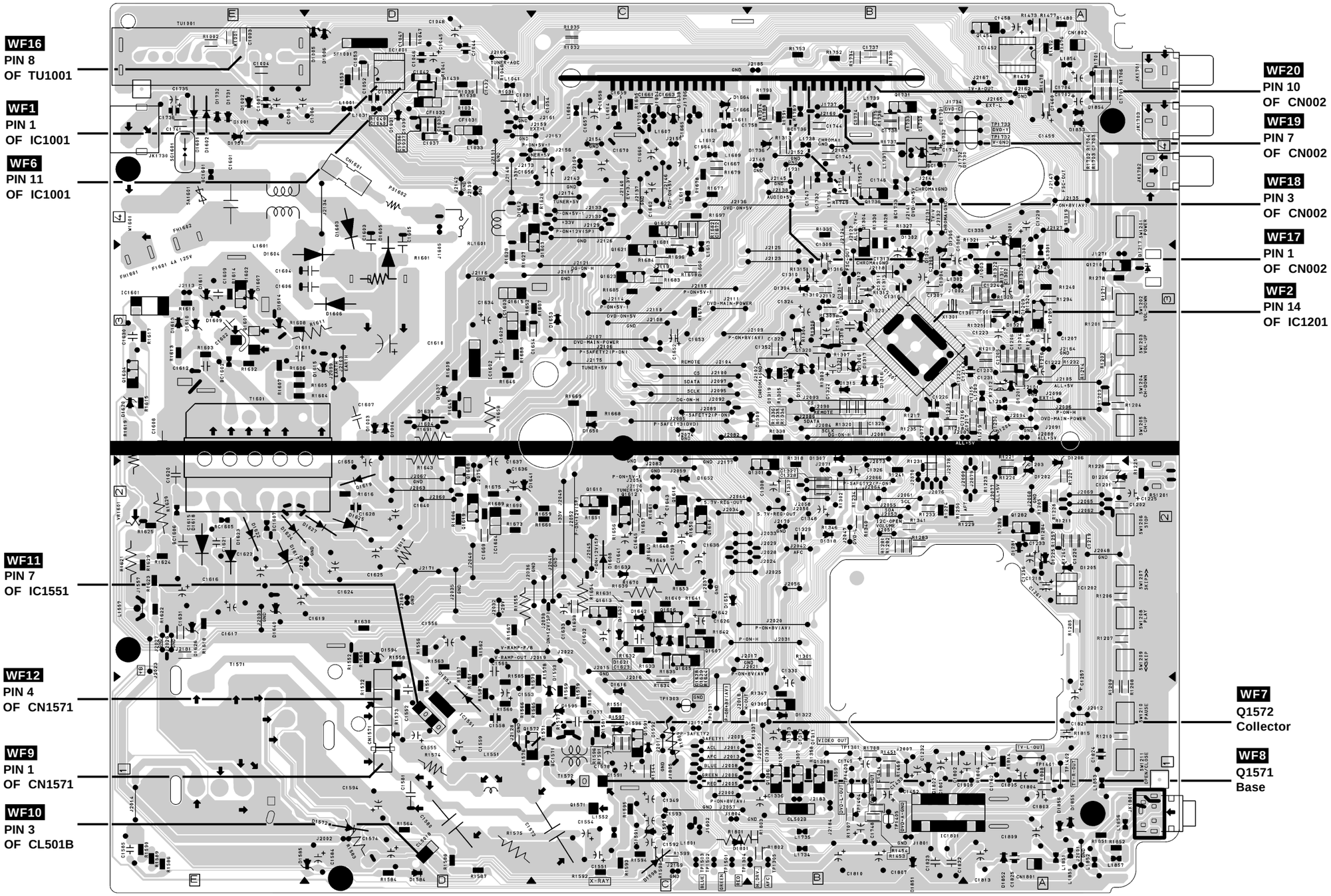
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

4A 125V

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4A, 125V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 4A, 125V.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

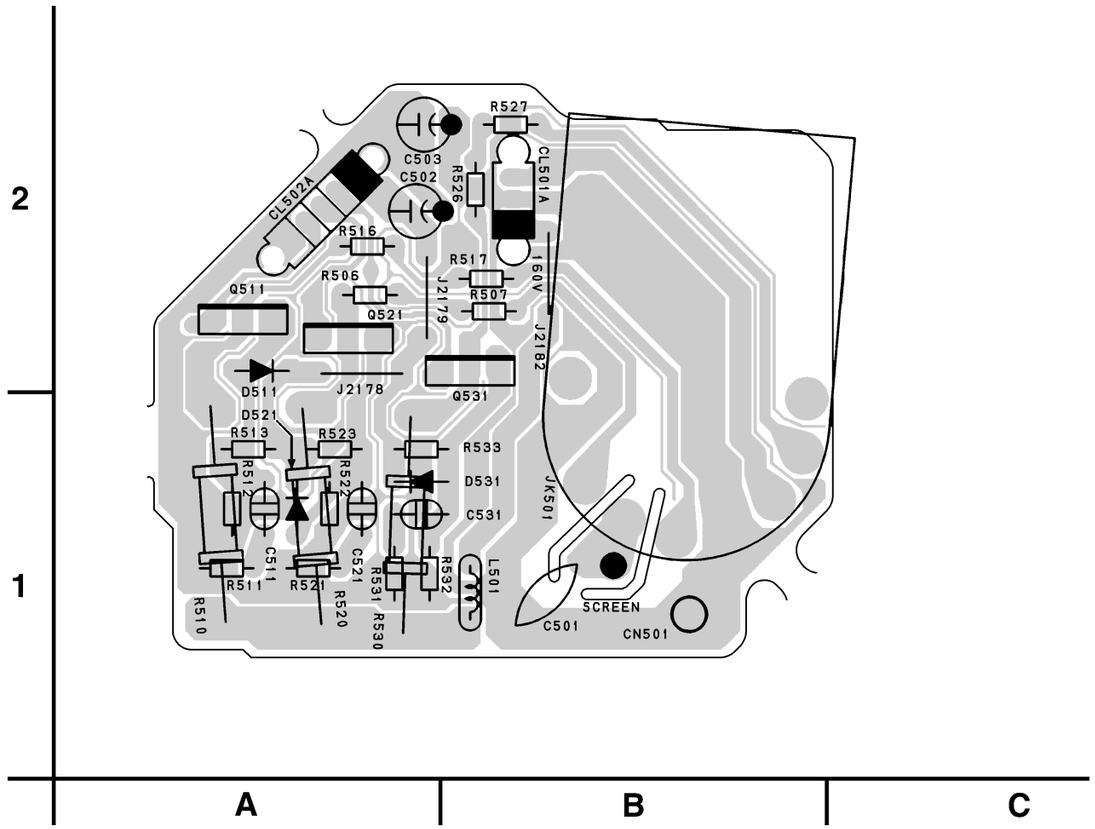
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.



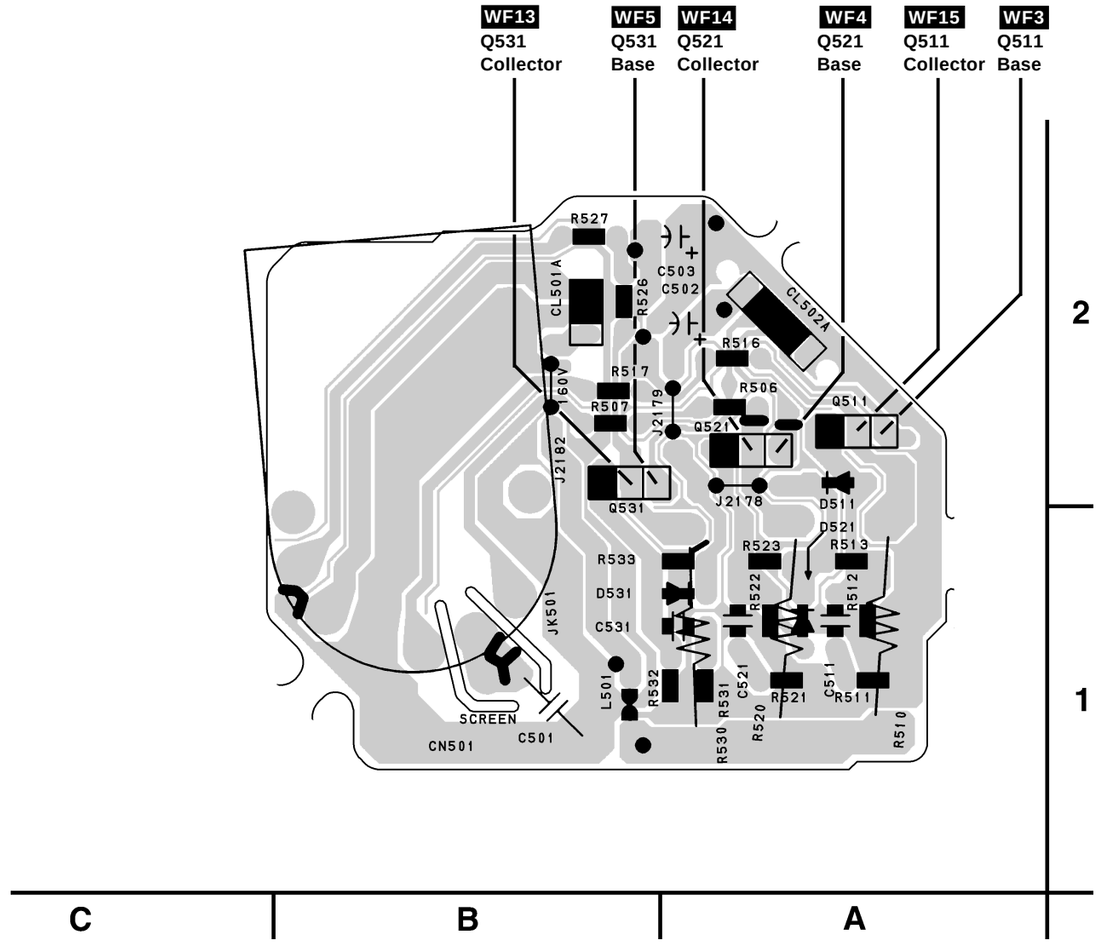
CRT CBA Top View < TV Section >

CRT CBA

Ref No.	Position
TRANSISTORS	
Q511	A-2
Q521	A-2
Q531	B-2
CONNECTORS	
CN501	B-1
CL501A	B-2
CL502A	A-2



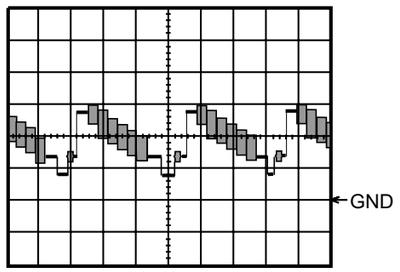
CRT CBA Bottom View < TV Section >



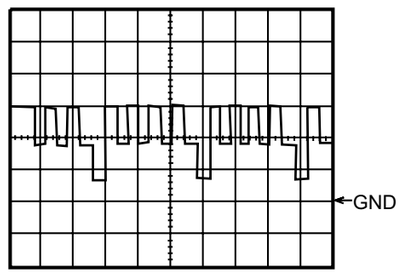
WAVEFORMS

Input: NTSC Color Bar Signal (with 1kHz Audio Signal) --- WF1~WF16
DVD Video (Power on (Stop) MODE) --- WF17, WF18
CD (1KHz Play) --- WF19, WF20
INITIAL POSITION: Unplug unit from AC outlet for at least five minutes, reconnect to AC outlet and then turn power on.
(Brightness---Center Color---Center Tint --- Center Contrast---Approx 70%)

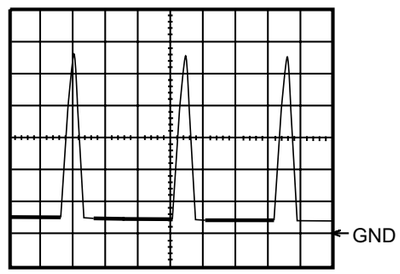
WF1 ~ WF20 = Waveforms to be observed at Waveform check points. (Shown in Schematic Diagram.)



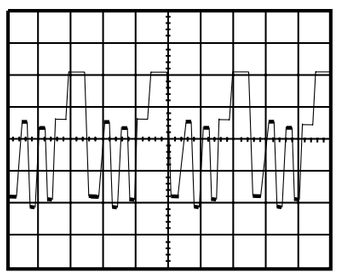
WF1 1DIV: 0.5V 20µsec
IC1001 Pin 1



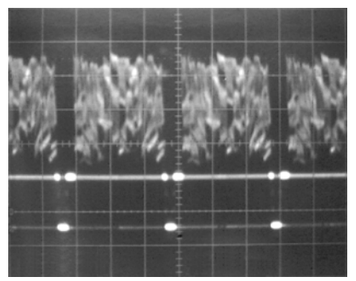
WF5 1DIV: 2V 20µsec
Q531 Base



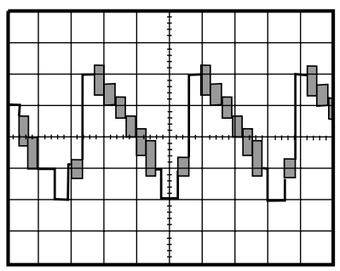
WF9 1DIV: 200V 20µsec
CN1571 Pin 1



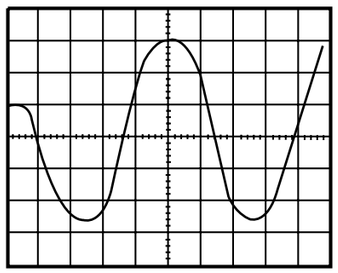
WF13 1DIV: 20V 20µsec
Q531 Collector



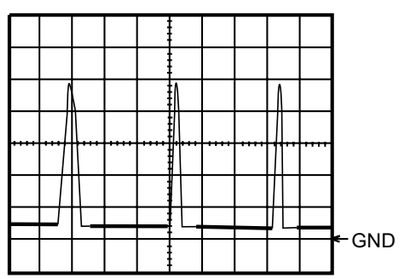
WF17 1DIV: 0.2V 20µsec
CN002 Pin 1



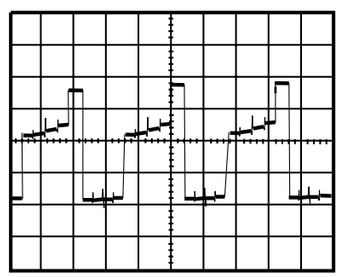
WF2 1DIV: 0.5V 20µsec
IC1201 Pin 14



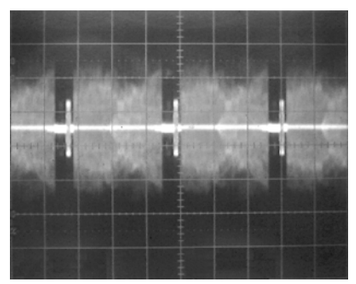
WF6 1DIV: 0.2V 20msec
IC1001 Pin 11



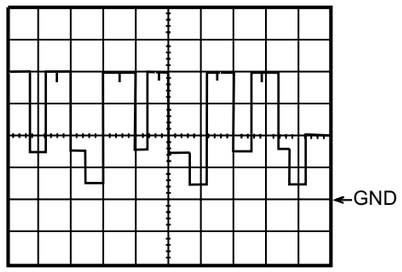
WF10 1DIV: 5V 20µsec
CL501B Pin 3



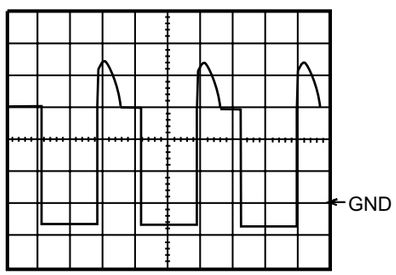
WF14 1DIV: 20V 20µsec
Q521 Collector



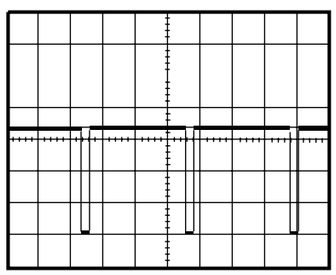
WF18 1DIV: 0.2V 20µsec
CN002 Pin 3



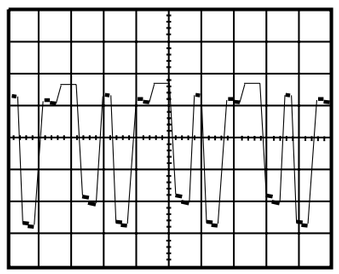
WF3 1DIV: 2V 20µsec
Q511 Base



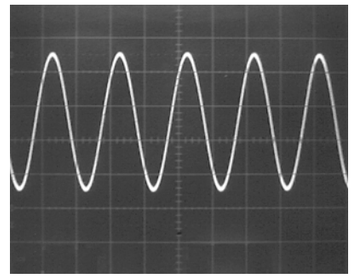
WF7 1DIV: 10V 20µsec
Q1572 Collector



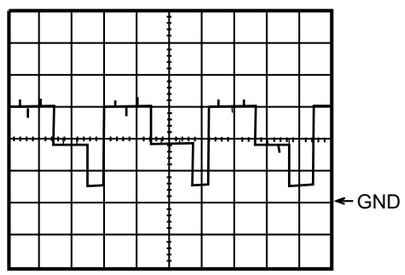
WF11 1DIV: 2V 5msec
IC1551 Pin 7



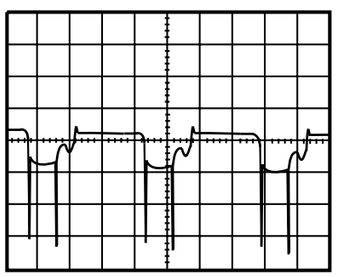
WF15 1DIV: 20V 20µsec
Q511 Collector



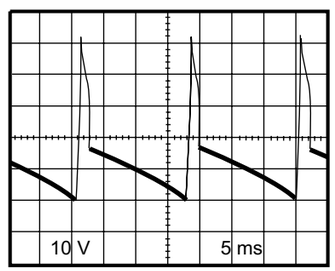
WF19 1DIV: 1V 0.5msec
CN002 Pin 7



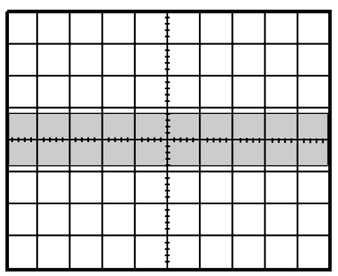
WF4 1DIV: 2V 20µsec
Q521 Base



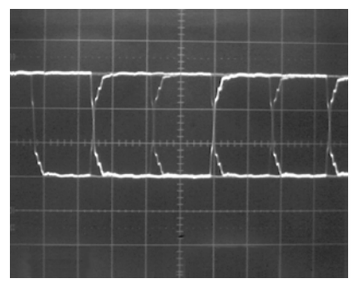
WF8 1DIV: 5V 20µsec
Q1571 Base



WF12 1DIV: 10V 5msec
CN1571 Pin 4

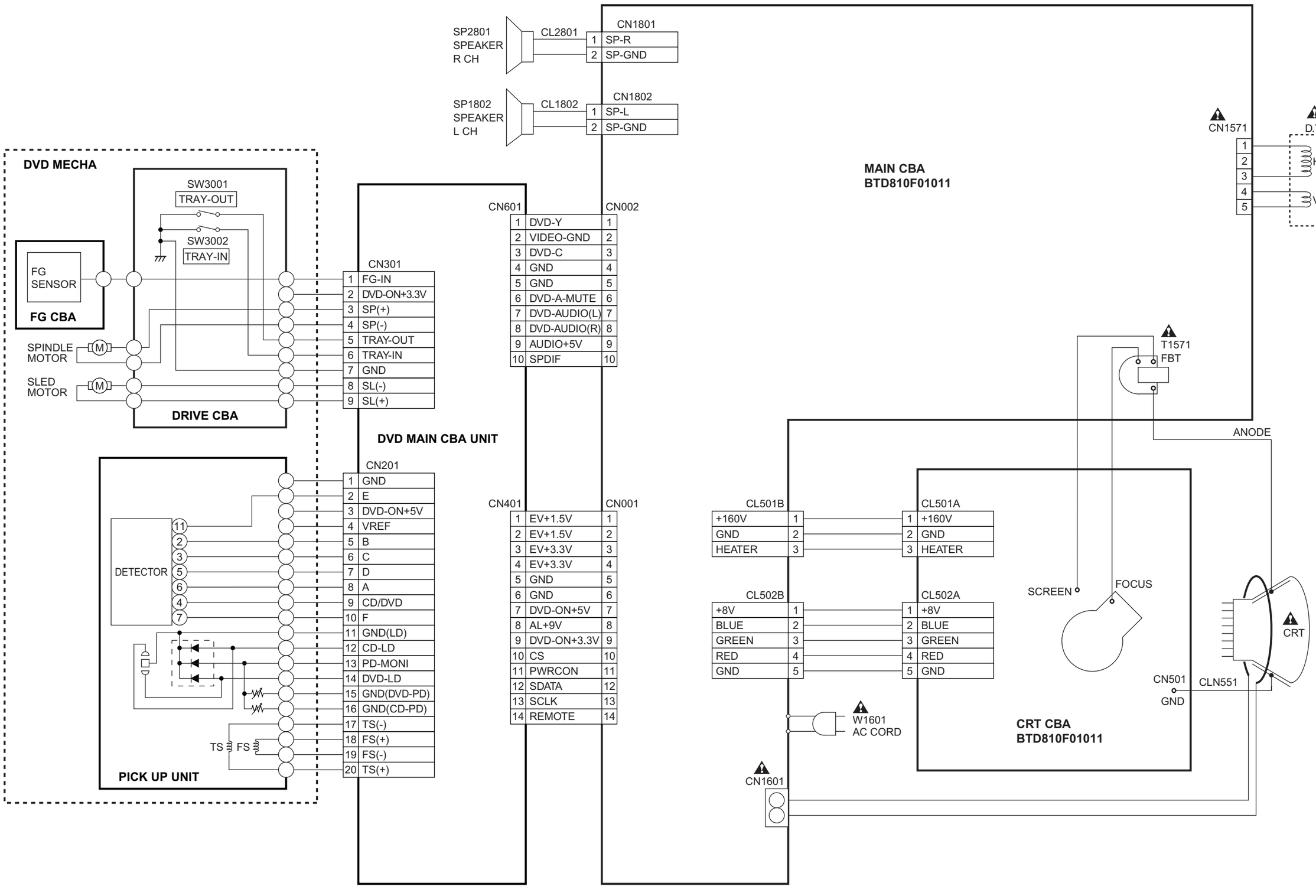


WF16 1DIV: 0.2V 20µsec
TU1001 Pin 8



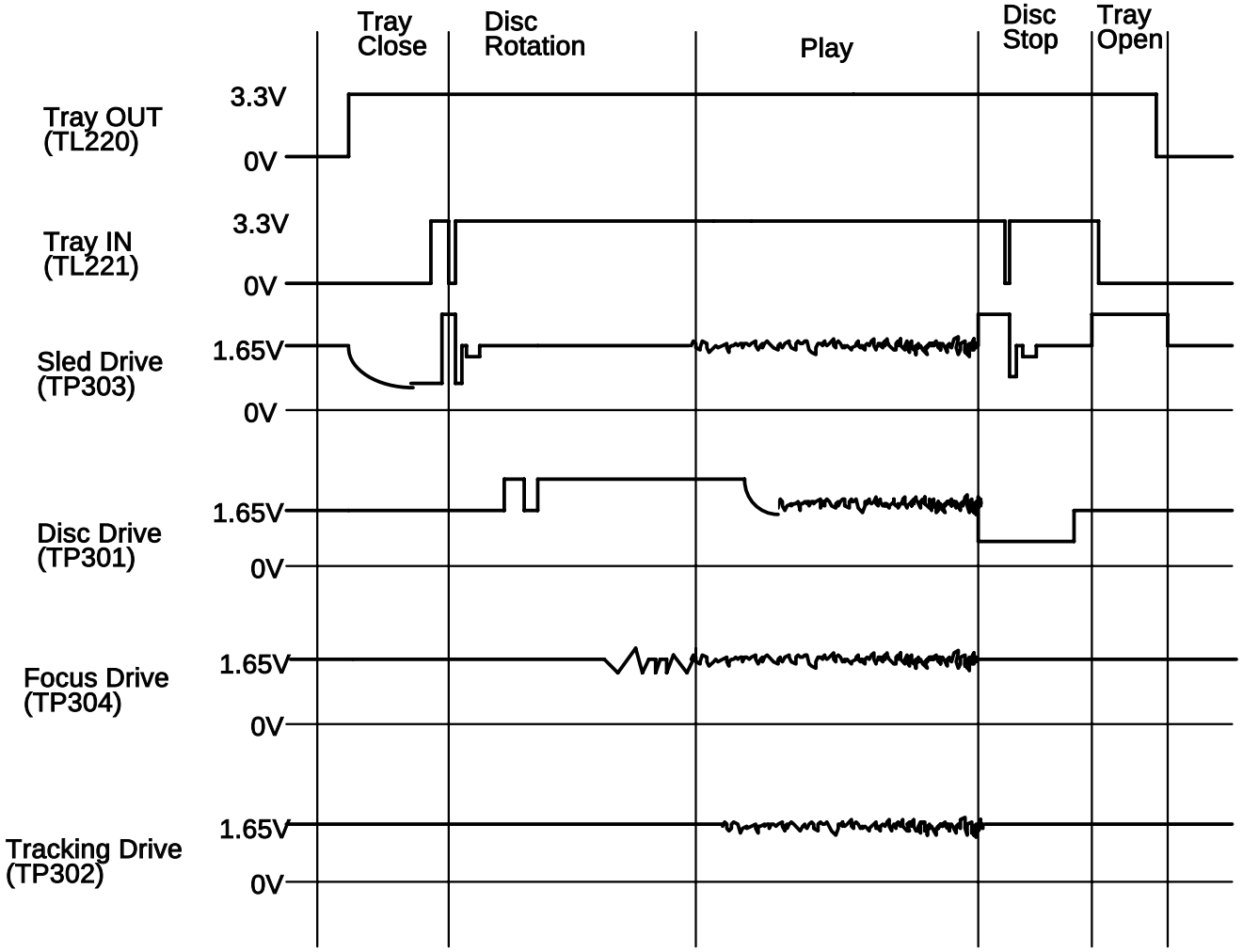
WF20 1DIV: 1V 0.1µsec
CN002 Pin 10

WIRING DIAGRAM



SYSTEM CONTROL TIMING CHARTS

Tray Close ~ Play / Play ~ Tray Open



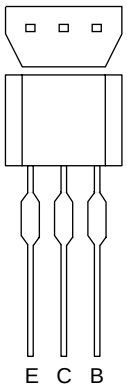
IC PIN FUNCTIONS

IC1201 (TV Micro Computer)

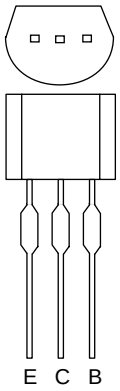
Pin No.	Signal Name	Function
1	GND	GND
2	N.U.	Not Used
3	N.U.	Not Used
4	TEST 1	TEST 1
5	GND	GND
6	VCC	AL+5V
7	TEST 0	TEST 0
8	FILT	FILT
9	HLF	Filter for CCD
10	VHOLD	VHOLD
11	CVIN	Input for Video Signal
12	RESET	RESET
13	N.U.	Not Used
14	Y-SW OUT	Composite Signal Output
15	GND	GND
16	3.58 X'TAL	3.58MHz Crystal
17	C-APC	CHROMINANCE APC
18	N.U.	Not Used
19	N.U.	Not Used
20	N.U.	Not Used
21	N.U.	Not Used
22	VCC	VCC
23	N.U.	(GND)
24	CVBS IN2	Composite Signal Input 2 (LINE)
25	N.U.	Not Used
26	CVBS IN1	Composite Signal Input 1 (TUNER)
27	N.U.	Not Used
28	5.7V REG OUT	5.7V Output
29	C IN	DVD Chrominance Signal
30	Y IN	DVD Luminance Signal
31	V REG VCC	DC 8.7V Input
32	FSC OUT	Clock Output 3.58MHz
33	N.U.	Not Used
34	N.U.	Not Used
35	N.U.	Not Used
36	N.U.	Not Used
37	V RAMP F/B	V Ramp Feed Back
38	V RAMP OUT	Vertical Output
39	V RAMP CAP	V Ramp OSC Capacitor
40	N.U.	Not Used
41	N.U.	Not Used
42	H VCO F/B	H Vco Feed Back
43	AFC FILT	Horizontal AFC Filter
44	GND	GND
45	FBP IN	Flyback Pulse Input
46	H-OUT	H Pulse Output
47	VCC	Vcc
48	VCC	Vcc
49	VCC	Vcc
50	R OUT	Red Output
51	G OUT	Green Output
52	B OUT	Blue Output
53	ACL	IB-Input
54	N.U.	Not Used
55	DVD-L	DVD at Low
56	SDA	I2C-BUS Controller Interface (Data
57	I2C-OPEN	White Balance Adjustment Judgement
58	SCL	I2C-BUS Controller Interface (Clock)
59	CS	DVD Interface Chip Select
60	SDATA	DVD Interface Data
61	SCLK	DVD Interface Clock
62	VOLUME	Volume Control
63	AMP-STANDBY	Speaker Amp. ON/OFF Output Signal
64	REMOTE OUT	DVD Control Key Code Output
65	DVD -MUTE	DVD Mute Signal Input
66	KEY-IN 0	Key Input 0
67	KEY-IN 1	Key Input 1

Pin No.	Signal Name	Function
68	N.U.	Not Used
69	AFT	AFT Voltage Input
70	REMOTE	Input for Remote Control
71	N.U.	Not Used
72	SPOT-KILL	Spot Countermeasure
73	P-SAFETY 1	Power Supply Protection
74	P-SAFETY 2	Power Supply Protection
75	P-SAFETY 3	Power Supply Protection
76	EXT-L	Switching External Input
77	DVD-MAIN-POWER	Power On Signal to High for DVD
78	P-ON-H	Output for P-ON-H
79	SP-MUTE	Speaker Mute Output
80	ACL-CONT	ACL Control Signal

LEAD IDENTIFICATIONS

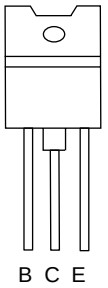


2SC3400
KTA1266(GR)
BN1F4M-T
KTC3199(BR)
2SC2785(J,H,F)
KRC103M
KRA103M
BA1F4M-T



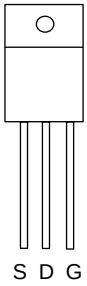
2SA950(Y,O)
KTA1271(Y)
2SA1175(F)
KTA1267(GR)
2SA1015-GR(TPE2)
2SC2120-(O,Y)(TPE2)
2SC1815-GR(TPE2)
KTC3198(GR)
2SC1627Y-TPE2
KTC3203(Y)
KTC2804(Y)
KTC3199(GR)

TT2140LS-YB11
2SC5885000RF

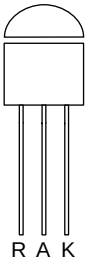


E: Emitter
C: Collector
B: Base

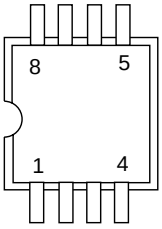
2SK3407



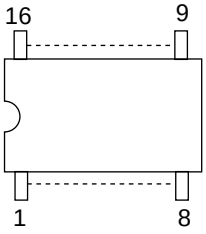
KIA431-AT



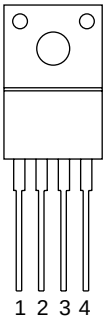
BR24C02F-W
AT24C02N-10SC
M24C02-MN6
BR24C02F
CAT24WC02JI
M24C02-WMN6



AN17812A
TC4053BF(N)
CD4053BCSJX
CD4053BNSR

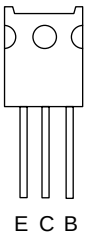


PQ015EF01SZ

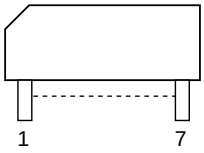


1: Vin
2: Vo
3: GND
4: Vc

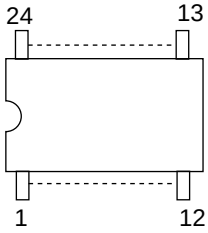
2SC3619
KTC3503Y



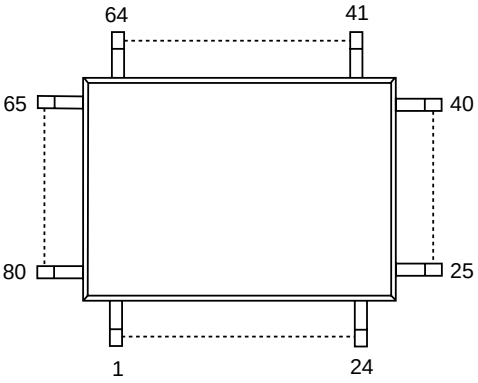
LA78041
LA78045



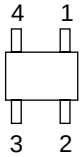
M61111FP



M61271M8-056FP-R71



PS2501-1W
PS2501-1L



Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

EXPLODED VIEWS AND PARTS LIST SECTION

20" COLOR TV/DVD

6520FDD

Sec. 2: Exploded views and Parts List Section
- **Exploded views**
- **Parts List**

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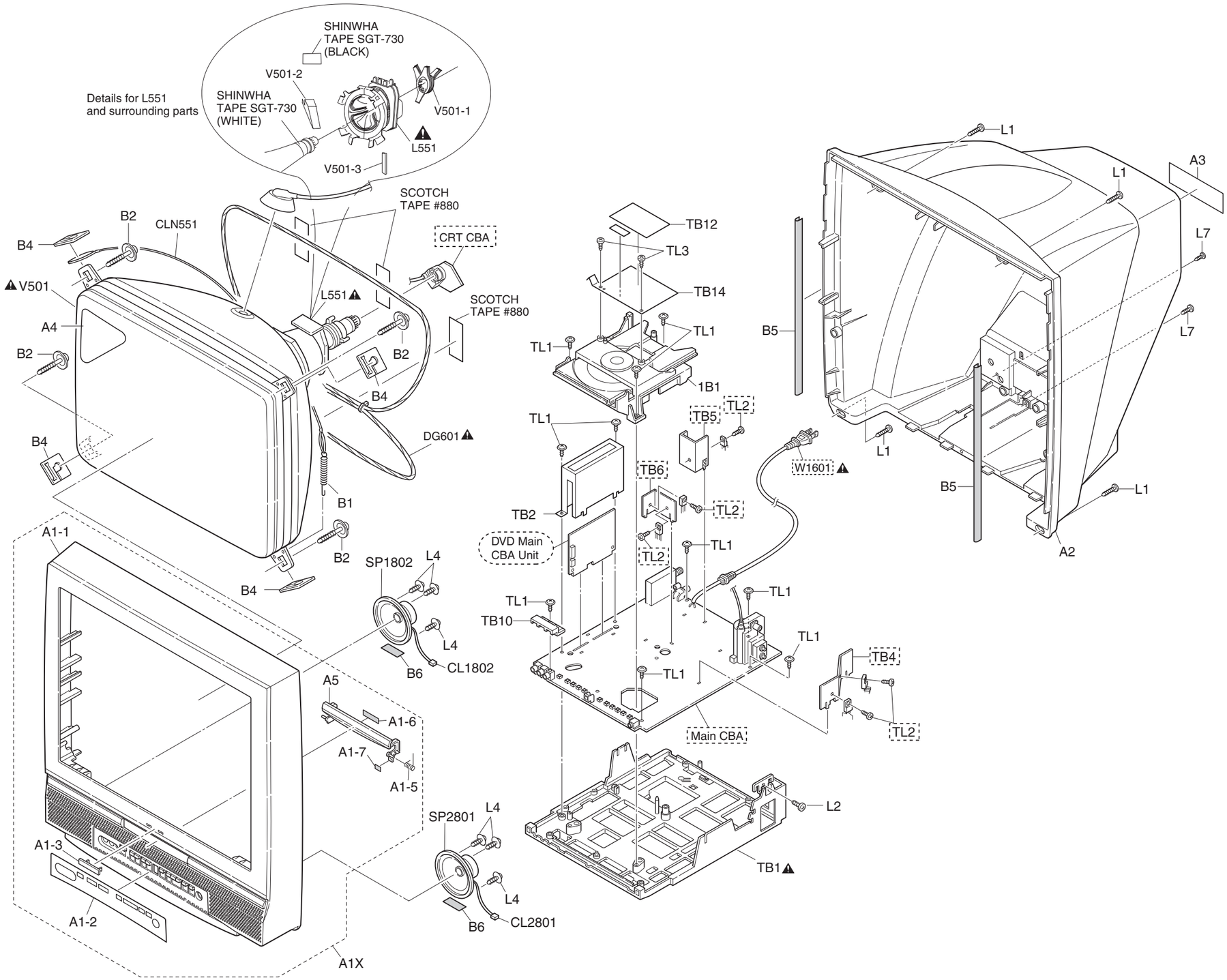
Cabinet Exploded Views 2-1-1
Packing Exploded Views 2-1-3
Mechanical Parts List 2-2-1
Electrical Parts List 2-3-1

EXPLODED VIEWS

Cabinet

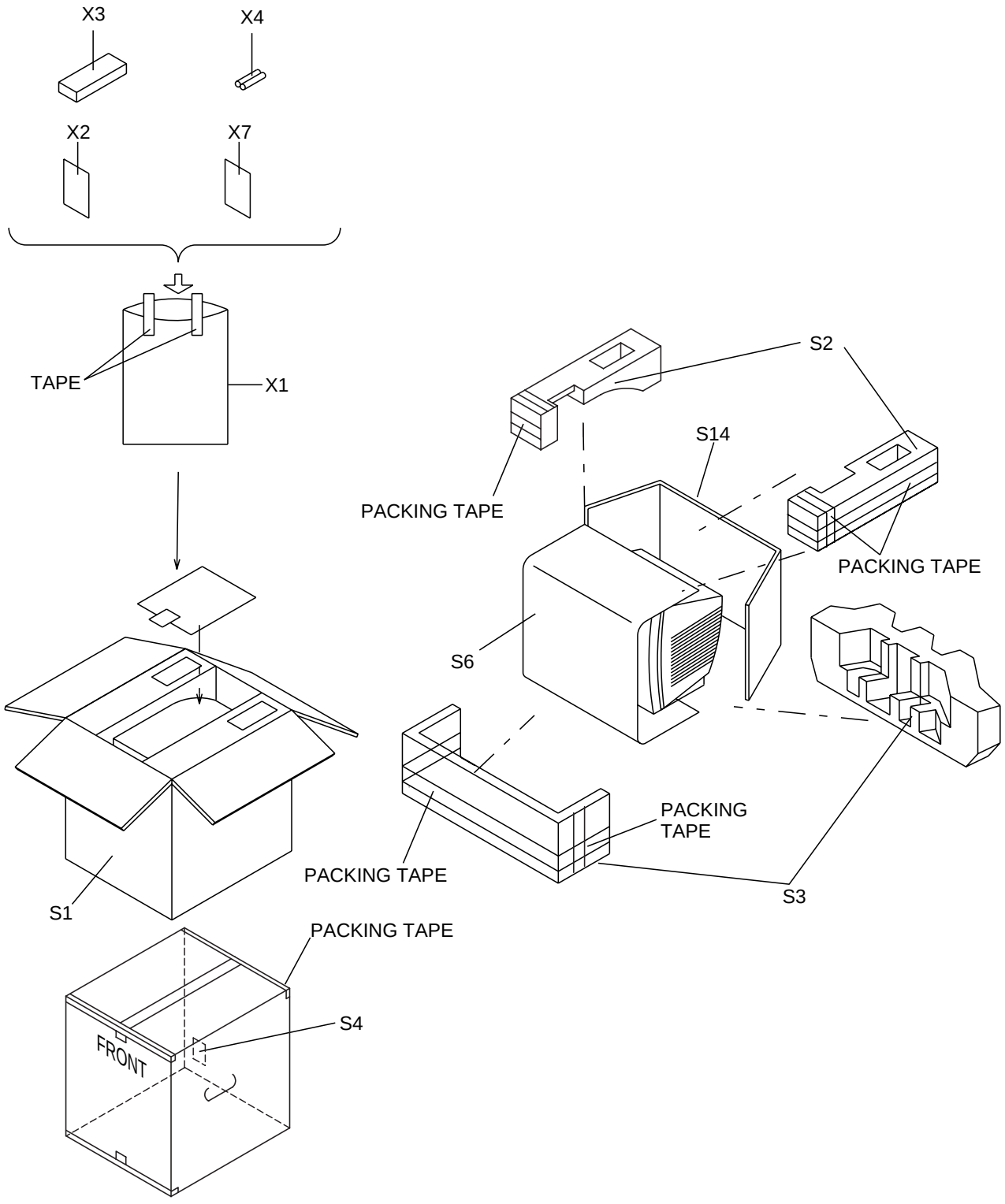


2-1-1

2-1-2

TD810CEX

Packing


X3
X4
X2
X7
TAPE
X1
S2
S14
PACKING TAPE
PACKING TAPE
S6
PACKING
TAPE
PACKING TAPE
S3
S1
PACKING TAPE
S4
FRONT

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE:
Parts that are not assigned part numbers (---------) are not available.

Ref. No.	Description	Part No.
A1X	FRONT CABINET ASSEMBLY TD810UA	0EM101383
A1-1	FRONT CABINET TD810UA	0EM000813
A1-2	CONTROL PLATE TD810UA	0EM201771
A1-3	BRAND BADGE L L1520UASYLVANIA	0EM406577
A1-5	TRAY SPRING TD707UH	0EM408552
A1-6	CLOTH(B) L5201U0:15X10X1.0T	0EM400076
A1-7	CLOTH(4X7X0.3T) TD250UA	0EM407578
A2	REAR CABINET TD810UA	0EM000812
A3	RATING LABEL TD810UA	---------
A4	POP LABEL TD810UA	---------
A5	TRAY PANEL TD810UA	0EM301947
1B1	DVD MECHA 0838 VCDVM040	N79T0GVM
B1	TENSION SPRING B0080B0:EM40808	26WH006
B2	SCREW L1500UA	0EM406142
B4	DEGAUSS HOLDER L9800UA	0EM404845
B5	CLOTH 190X15XT0.5	TS7623
B6	CLOTH(10X30XT0.5) B5900UA	0EM404486
CL1802	WIRE ASSEMBLY 2P/150	WX1B5900-001
CL2801	WIRE ASSEMBLY 2P/150	WX1B5900-001
CLN551	CRT WIRE WX1T7180-005	WX1T7180-005
DG601⚠	DEGAUSSING COIL AVDG187 or	LLBH00ZWR053
⚠	DEGAUSSING COIL F-053	LLBH00ZTM053
L1	SCREW, P-TIGHT 4X18 BIND HEAD +	GBMP4180
L2	SCREW TAPPING M4X14	DBU14140
L4	SCREW, ASSEMBLED 12:M3X12	0EM406746
L7	SCREW, P-TIGHT 3X10 BIND HEAD+	GBKP3100
SP1802	SPEAKER S08F02B or	DSD0808XQ010
	SPEAKER J-F097-C5	DSD0808DCP01
SP2801	SPEAKER S08F02B or	DSD0808XQ010
	SPEAKER J-F097-C5	DSD0808DCP01
TB1⚠	TRAY CHASSIS TD810UA	0EM000801
TB2	SHIELD BOX TD808UJ	0EM301945
TB10	RCA HOLDER TD810UA	0EM408450
TB12	LABEL, LASER CAUTION (C) TD100UA	---------
TB14	LODER COVER TD808UJ	0EM408431
TL1	SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
TL3	P-TIGHT SCREW 3X8 BIND +	GBMP3080
L551⚠	DEFLECTION YOKE KDY3NWG22X	LLBY00ZMS030
V501⚠	CRT A51LYZ093X	TCRT190MS014
V501-1	C.P.MAGNET JH8210-SD	XM04000BV008
V501-2	WEDGE FT-00110W	XV10000T4001
V501-3	RUBBER MAGNET 20X10X1.2	XM05000BV001
	PACKING	
S1	CARTON TD810UA	0EM301953
S2	STYROFOAM TOP ASSEMBLY TD810UA	0EM408510
S3	STYROFOAM BOTTOM ASSEMBLY TD810UA	0EM408511
S4	SERIAL NO. LABEL TD810UA	---------
S6	SET SHEET B7500UA:1000X1700	0EM402178
S14	HOLD PAD TD801UB	0EM408133
	ACCESSORIES	
X1	POLYETHYLENE BAG 235X365XT0.03	0EM408420
X2	OWNER'S MANUAL TD810UA	0EMN02255
X3	REMOTE CONTROL 182/ERC001/NE207UD	NE207UD
X4	DRY BATTERY R6P UM3 or	XB0M451GH001
	DRY BATTERY R6P(AR)2PX or	XB0M451HU002
	DRY BATTERY R6P(AR)2P X ICI or	XB0M451HU003
	DRY BATTERY(SUNRISE) R6SSE/2S or	XB0M451MS002
	DRY BATTERY R6P/2S	XB0M451T0001
X7	RETURN STOP SHEET L6101UB	0EM407077

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25%	D.....±0.5%	F.....±1%
G.....±2%	J.....±5%	K.....±10%
M.....±20%	N.....±30%	Z.....+80/-20%

DVD MAIN CBA UNIT

Ref. No.	Description	Part No.
	DVD MAIN CBA UNIT	N7AT1GUP

MMA CBA

Ref. No.	Description	Part No.
	MMA CBA Consists of the following	0ESA05700
	MAIN CBA CRT CBA	---------- ----------

MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA Consists of the following	----------
	CAPACITORS	
C1003	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1004	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1006	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C1007	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C1008	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C1031	ELECTROLYTIC CAP. 2.2µF/50V M or	CE1JMASDL2R2
	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASTL2R2
C1033	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C1035	CERAMIC CAP.(AX) CH J 15pF/50V	CCA1JJTCH150
C1036	CHIP CERAMIC CAP. B K 220pF/50V	CHD1JKB0B221
C1037	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C1039	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C1040	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1042	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C1044	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C1045	ELECTROLYTIC CAP. 220µF/6.3V M or	CE0KMASDL221
	ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASTL221
C1046	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C1047	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1048	ELECTROLYTIC CAP. 47µF/50V M or	CE1JMASDL470
	ELECTROLYTIC CAP. 47µF/50V M	CE1JMASTL470
C1052	CHIP CERAMIC CAP. B K 0.047µF/50V	CHD1JKB0B473
C1053	CHIP CERAMIC CAP. B K 0.047µF/50V	CHD1JKB0B473
C1054	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZB0F103
C1203	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZB0F103
C1204	CHIP CERAMIC CAP. B K 0.015µF/50V	CHD1JKB0B153
C1205	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C1206	CHIP CERAMIC CAP. B K 220pF/50V	CHD1JKB0B221
C1207	FILM CAP.(P) 0.001µF/50V J or	CMA1JJS00102
	FILM CAP.(P) 0.001µF/50V J	CA1J102MS029
C1209	CHIP CERAMIC CAP. F Z 0.1µF/25V	CHD1EZB0F104
C1214	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C1215	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZB0F103
C1216	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZB0F103
C1217	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZB0F103
C1218	CHIP CERAMIC CAP. F Z 0.1µF/25V	CHD1EZB0F104
C1219	CHIP CERAMIC CAP. B K 220pF/50V	CHD1JKB0B221
C1220	CHIP CERAMIC CAP. B K 220pF/50V	CHD1JKB0B221
C1222	ELECTROLYTIC CAP. 0.1µF/50V M or	CE1JMASDL0R1
	ELECTROLYTIC CAP. 0.1µF/50V M	CE1JMASTL0R1
C1223	ELECTROLYTIC CAP. 10µF/16V M or	CE1CMASDL100
	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASTL100
C1224	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1225	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C1230	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1231	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASTL101
C1232	ELECTROLYTIC CAP. 4.7µF/25V M or	CE1EMASDL4R7
	ELECTROLYTIC CAP. 4.7µF/25V M	CE1EMASTL4R7
C1233	CHIP CERAMIC CAP.(MELF) F Z 0.01µF/16V	CZM1CZB0F103
C1256	ELECTROLYTIC CAP. 4.7µF/25V M or	CE1EMASDL4R7
	ELECTROLYTIC CAP. 4.7µF/25V M	CE1EMASTL4R7
C1257	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1261	ELECTROLYTIC CAP. 22µF/16V M or	CE1CMASDL220
	ELECTROLYTIC CAP. 22µF/16V M	CE1CMASTL220
C1301	CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C1302	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1304	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASTL101
C1305	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1306	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1308	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C1309	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1310	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010

Ref. No.	Description	Part No.
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1311	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C1313	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C1314	CHIP CERAMIC CAP. CH D 10pF/50V	CHD1JDBCH100
C1317	TF CAP. 0.47µF/50V J or	CT1J474MS045
	FILM CAP. 0.47µF/50V J	122Z317S
C1318	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1319	ELECTROLYTIC CAP. 2.2µF/50V M or	CE1JMASDL2R2
	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASTL2R2
C1320	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1322	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASDL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C1324	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASDL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C1325	CHIP CERAMIC CAP. F Z 0.1µF/25V	CHD1EZB0F104
C1326	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1331	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C1335	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C1336	ELECTROLYTIC CAP. 10µF/16V M or	CE1CMASDL100
	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASTL100
C1348	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASTL101
C1349	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1352	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1432	CHIP CERAMIC CAP. B K 0.027µF/25V	CHD1EKB0B273
C1433	CHIP CERAMIC CAP. CH J 820pF/25V	CHD1EJBCH821
C1434	CHIP CERAMIC CAP. CH J 820pF/25V	CHD1EJBCH821
C1452	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C1458	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C1460	CHIP CERAMIC CAP. F Z 0.022µF/50V	CHD1JZB0F223
C1551	ELECTROLYTIC CAP. 2.2µF/100V M or	CE2AMASDL2R2
	ELECTROLYTIC CAP. 2.2µF/100V M	CE2AMASTL2R2
C1552	MYLAR CAP. 0.22µF/50V J or	CMA1JJS00224
	FILM CAP.(P) 0.22µF/50V J	CA1J224MS029
C1553	ELECTROLYTIC CAP. 1µF/50V LL or	CE1JMASLH1R0
	ELECTROLYTIC CAP. 1µF/50V M LL or	CE1JMASLL1R0
	ELECTROLYTIC CAP. 1µF/50V M LL	CE1JMASLL010
C1554	ELECTROLYTIC CAP. 2.2µF/100V M or	CE2AMASDL2R2
	ELECTROLYTIC CAP. 2.2µF/100V M	CE2AMASTL2R2
C1555	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C1556	ELECTROLYTIC CAP. 1000µF/25V M or	CE1EMZPDL102
	ELECTROLYTIC CAP. 1000µF/25V M	CE1EMZPTL102
C1558	CERAMIC CAP.(AX) B K 0.01µF/50V	CA1J103TU011
C1559	ELECTROLYTIC CAP. 470µF/35V M or	CE1GMASDL471
	ELECTROLYTIC CAP. 470µF/35V M	CE1GMASTL471
C1572⚠	P.P. CAP 0.33µF/200V J or	CA2D334VC013
⚠	PP CAP. 0.33µF/250V J	CT2E334MS041
C1574⚠	ELECTROLYTIC CAP. 4.7µF/250V M or	CE2EMASDL4R7
⚠	ELECTROLYTIC CAP. 4.7µF/250V M	CE2EMASTL4R7
C1577	FILM CAP.(P) 0.022µF/50V J or	CMA1JJS00223

Ref. No.	Description	Part No.
	FILM CAP.(P) 0.022µF/50V J	CA1J223MS029
C1578	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C1580⚠	P.P.CAP 0.01µF/1.6KV J or	CA3C103VC011
⚠	PP CAP. 0.01µF/1.6KV J or	CT3C103MS039
⚠	METALLIZED FILM CAP. 0.01µF/1.6KV J or	CT3C103F7004
⚠	POLYPROPYLENE FILM CAP. 0.01µF/1.6KV	CT3C103HJE16
C1581⚠	CERAMIC CAP. BN 560pF/2KV or	CCD3DKA0B561
⚠	CERAMIC CAP. 560pF/2KV or	CA3D561PAN04
⚠	CERAMIC CAP. RB 560pF/2KV	CA3D561TE006
C1584⚠	ELECTROLYTIC CAP. 1µF/160V M or	CE2CMASDL1R0
⚠	ELECTROLYTIC CAP. 1µF/160V M	CE2CMASTL1R0
C1585	CERAMIC CAP. B K 100pF/500V	CCD2JKS0B101
C1591⚠	ELECTROLYTIC CAP. 2.2µF/50V M or	CE1JMASDL2R2
⚠	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASTL2R2
C1592⚠	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
⚠	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C1593⚠	ELECTROLYTIC CAP. 4.7µF/50V M or	CE1JMASDL4R7
⚠	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASTL4R7
C1594	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPDL101
	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPTL101
	ELECTROLYTIC CAP. 100µF/160V M W/F	CE2CMZNTL101
C1601⚠	METALLIZED FILM CAP. 0.1µF/250V or	CT2E104MS037
⚠	FILM CAP.(MP) 0.1µF/250V K or	CT2E104DC011
⚠	METALLIZED FILM CAP. 0.1µF/275V K	CT2E104HJE06
C1602	CERAMIC CAP. BN 820pF/2KV or	CCD3DKA0B821
	CERAMIC CAP. 820pF/2KV or	CA3D821PAN04
	CERAMIC CAP RB 820pF/2KV	CA3D821TE006
C1603	CERAMIC CAP. F Z 0.01µF/500V or	CCD2JZP0F103
	CERAMIC CAP. 0.01µF/AC250V or	CCD2EZA0F103
	CERAMIC CAP. E Z 0.01µF/500V	CCD2JZP0E103
C1604	CERAMIC CAP. F Z 0.01µF/500V or	CCD2JZP0F103
	CERAMIC CAP. 0.01µF/AC250V or	CCD2EZA0F103
	CERAMIC CAP. E Z 0.01µF/500V	CCD2JZP0E103
C1607⚠	SAFETY CAP. 4700pF/250V KX	CA2E472MR050
C1609	FILM CAP.(P) 0.082µF/50V J or	CMA1JJS00823
	FILM CAP.(P) 0.082µF/50V J	CA1J823MS029
C1610⚠	ELECTROLYTIC CAP. 470µF/200V or	CA2D471NC013
⚠	ELECTROLYTIC CAP. 470µF/200V M W/F	CA2D471EA029
C1611	FILM CAP.(P) 0.0015µF/50V J or	CMA1JJS00152
	FILM CAP.(P) 0.0015µF/50V J	CA1J152MS029
C1612	FILM CAP.(P) 0.033µF/50V J or	CMA1JJS00333
	FILM CAP.(P) 0.033µF/50V J	CA1J333MS029
C1615	CERAMIC CAP. BN 390pF/2KV or	CCD3DKA0B391
	CERAMIC CAP. 390pF/2KV or	CA3D391PAN04
	CERAMIC CAP. RB 390pF/2KV	CA3D391TE006
C1616	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPDL101
	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPTL101
	ELECTROLYTIC CAP. 100µF/160V M W/F	CE2CMZNTL101
C1617	ELECTROLYTIC CAP. 470µF/35V M or	CE1GMZPDL471
	ELECTROLYTIC CAP. 470µF/35V M	CE1GMZPTL471
C1619	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C1620	CERAMIC CAP. BN 390pF/2KV or	CCD3DKA0B391
	CERAMIC CAP. 390pF/2KV or	CA3D391PAN04
	CERAMIC CAP. RB 390pF/2KV	CA3D391TE006
C1621	CERAMIC CAP. B K 2200pF/100V	CCD2AKS0B222
C1622	ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZPDL102
	ELECTROLYTIC CAP. 1000µF/16V M(VR/HC)	CE1CMZNTL102
C1624	ELECTROLYTIC CAP. 2200µF/6.3V M or	CE0KMZPDL222
	ELECTROLYTIC CAP. 2200µF/6.3V M	CE0KMZPTL222

Ref. No.	Description	Part No.
C1625	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASDL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C1626	ELECTROLYTIC CAP. 10µF/16V M or	CE1CMASDL100
	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASTL100
C1628	CERAMIC CAP.(AX) B K 2200pF/50V	CA1J222TU011
C1629	FILM CAP.(P) 0.027µF/50V J or	CMA1JJS00273
	FILM CAP.(P) 0.027µF/50V J	CA1J273MS029
C1630	FILM CAP.(P) 0.0047µF/50V J or	CMA1JJS00472
	FILM CAP.(P) 0.0047µF/50V J	CA1J472MS029
C1631	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1632	ELECTROLYTIC CAP. 220µF/16V M or	CE1CMASDL221
	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASTL221
C1633	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C1634	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1637	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASTL101
C1639	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C1640	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C1642	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C1650	ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASDLR47
	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASTLR47
C1654	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1656	ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C1658	ELECTROLYTIC CAP. 10µF/16V M or	CE1CMASDL100
	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASTL100
C1663	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1664	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMZPDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMZPTL471
C1666	CERAMIC CAP.(AX) X M 2200pF/16V	CCA1CMT0X222
C1669	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C1670	ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C1672	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C1702	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1704	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1732	ELECTROLYTIC CAP. 220µF/16V M or	CE1CMASDL221
	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASTL221
C1733	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C1734	CHIP CERAMIC CAP. F Z 0.1µF/25V	CHD1EZB0F104
C1735	ELECTROLYTIC CAP. 47µF/16V M or	CE1CMASDL470
	ELECTROLYTIC CAP. 47µF/16V M	CE1CMASTL470
C1737	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V	CZM1JJBSL101
C1738	CHIP CERAMIC CAP. CH J 20pF/50V	CHD1JJBCH200
C1741	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
C1746	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C1748	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C1749	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C1758	CHIP CERAMIC CAP.(MELF) SL J 100pF/50V	CZM1JJBSL101
C1762	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100

Ref. No.	Description	Part No.
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C1801	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1802	CHIP CERAMIC CAP. CH J 820pF/25V	CHD1EJBCH821
C1803	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C1804	CHIP CERAMIC CAP. CH J 820pF/25V	CHD1EJBCH821
C1807	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C1808	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C1809	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C1810	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C1813	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C1821	ELECTROLYTIC CAP. 10µF/16V M or	CE1CMASDL100
	ELECTROLYTIC CAP. 10µF/16V M	CE1CMASTL100
C1824	CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C1825	CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
	CONNECTORS	
CN1571 ⚠	CONNECTOR BASE, 5P TV-50P-05-V3 or	J3TVC05TG002
⚠	CONNECTOR BASE, 5P RTB-1.5-5P	J3RTC05JG001
CN1601 ⚠	CONNECTOR BASE, 2P TV-50P-02-V3 or	J3TVC02TG002
⚠	CONNECTOR BASE, 2P RTB-1.5-2P	J3RTC02JG001
CN1801	STRAIGHT CONNECTOR BASE 00 8283 0212 00 000 or	J383C02UG002
	STRAIGHT PIN HEADER, 2P 173981-2	1770258
CN1802	STRAIGHT CONNECTOR BASE 00 8283 0212 00 000 or	J383C02UG002
	STRAIGHT PIN HEADER, 2P 173981-2	1770258
	DIODES	
D1001	PCB JUMPER D0.6-P5.0	JW5.0T
D1003	PCB JUMPER D0.6-P5.0	JW5.0T
D1031	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1202	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D1203	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D1204	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D1205	ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
	ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D1225	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D1226	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D1302	ZENER DIODE MTZJT-779.1A or	QDTA0MTZJ9R1
	ZENER DIODE DZ-9.1BSAT265	NDTA0DZ9R1BS
D1303	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1304	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
D1307	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1309	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148

Ref. No.	Description	Part No.
D1311	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1312	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1313	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1315	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1316	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1317	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1318	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1320	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1321	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1322	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1323	ZENER DIODE MTZJT-779.1B or	QDTB0MTZJ9R1
	ZENER DIODE DZ-9.1BSBT265	NDTB0DZ9R1BS
D1552	DIODE 1N5397-B or	NDLZ001N5397
	RECTIFIER DIODE ERB12-06	QDQZ0ERB1206
D1572⚠	DIODE FR104-B	NDLZ000FR104
D1584⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D1585	ZENER DIODE MTZJT-775.1B or	QDTB0MTZJ5R1
	ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D1591⚠	ZENER DIODE MTZJT-7736B or	QDTB00MTZJ36
⚠	ZENER DIODE DZ-36BSBT265	NDTB00DZ36BS
D1592⚠	PCB JUMPER D0.6-P5.0	JW5.0T
D1595⚠	ZENER DIODE MTZJT-7722C or	QDTC00MTZJ22
⚠	ZENER DIODE DZ-22BSCT265	NDTC00DZ22BS
D1596⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D1597⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D1598⚠	DIODE FR104-B	NDLZ000FR104
D1601	PCB JUMPER D0.6-P10.0	JW10.0T
D1603⚠	DIODE 1N5406 or	NDLZ001N5406
⚠	DIODE ERC04-06L3	QD4Z0ERC0406
D1604⚠	DIODE 1N5406 or	NDLZ001N5406
⚠	DIODE ERC04-06L3	QD4Z0ERC0406
D1605⚠	DIODE 1N5406 or	NDLZ001N5406
⚠	DIODE ERC04-06L3	QD4Z0ERC0406
D1606⚠	DIODE 1N5406 or	NDLZ001N5406
⚠	DIODE ERC04-06L3	QD4Z0ERC0406
D1607	ZENER DIODE MTZJT-7724C or	QDTC00MTZJ24
	ZENER DIODE DZ-24BSCT265	NDTC00DZ24BS
D1608	DIODE FR104-B	NDLZ000FR104
D1609⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D1610	ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
	ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D1613	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1614	ZENER DIODE MTZJT-7736A or	QDTA00MTZJ36
	ZENER DIODE DZ-36BSAT265	NDTA00DZ36BS
D1616	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148

Ref. No.	Description	Part No.
D1617⚠	SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
⚠	SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D1618	FAST RECOVERY DIODE ERC25-06L3	QD4Z0ERC2506
D1619⚠	DIODE FR104-B	NDLZ000FR104
D1620⚠	ZENER DIODE MTZJT-777.5B or	QDTB0MTZJ7R5
⚠	ZENER DIODE DZ-7.5BSBT265	NDTB0DZ7R5BS
D1621	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1622⚠	DIODE FR104-B	NDLZ000FR104
D1623⚠	DIODE FR154 or	NDLZ000FR154
⚠	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D1624⚠	SCHOTTKY BARRIER DIODE 21DQ04 or	QDQZ0021DQ04
⚠	SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D1625⚠	DIODE FR154 or	NDLZ000FR154
⚠	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D1626	ZENER DIODE MTZJT-7736A or	QDTA00MTZJ36
	ZENER DIODE DZ-36BSAT265	NDTA00DZ36BS
D1627⚠	SCHOTTKY BARRIER DIODE 21DQ04 or	QDQZ0021DQ04
⚠	SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D1628	PCB JUMPER D0.6-P5.0	JW5.0T
D1629⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D1632⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D1633	ZENER DIODE MTZJT-7713C or	QDTC00MTZJ13
	ZENER DIODE DZ-13BSCT265	NDTC00DZ13BS
D1637⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D1638	ZENER DIODE MTZJT-773.9B or	QDTB0MTZJ3R9
	ZENER DIODE DZ-3.9BSBT265	NDTB0DZ3R9BS
D1640⚠	DIODE 1ZC33 or	QDQZ0001ZC33
⚠	ZENER DIODE RD33FB	QDQZ000RD33F
D1641	ZENER DIODE MTZJT-775.6C or	QDTC0MTZJ5R6
	ZENER DIODE DZ-5.6BSCT265	NDTC0DZ5R6BS
D1650⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D1652	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1653⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D1660	PCB JUMPER D0.6-P5.0	JW5.0T
D1730	ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
	ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D1731	PCB JUMPER D0.6-P5.0	JW5.0T
D1736	ZENER DIODE MTZJT-775.1B or	QDTB0MTZJ5R1
	ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D1801⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
	ICS	
IC1001	IC:VIF/SIF DETECTOR M61111FP	QSZBA0SMB010
IC1201⚠	MICRO COMPUTER VCD M61271M8-056FP-R71	QSZAA0RHT005
IC1202	IC:MEMORY BR24C02F-W or	QSMBA0SRM003
	IC:MEMORY AT24C02N-10SC or	NSMMA0SAZ012
	IC(EEPROM) M24C02-MN6 or	NSMMA0SSS028
	IC:MEMORY BR24C02F or	QSMMA0SRM003
	IC:EEPROM CAT24WC02JI or	NSZBA0SBG001
	IC(EEP-ROM) M24C02-WMN6	NSZAA0SSS004
IC1452	IC:SWITCH TC4053BF(N) or	QSMBA0STS002
	IC:ANALOG MULTIPLEXERS CD4053BCSJX or	NSZBA0TF3071
	IC:ANALOG MULTIPLEXER CD4053BNSR	NSZBA0TTY093
IC1551⚠	IC:VERTICAL OUTPUT LA78041 or	QSZBA0SSY006

Ref. No.	Description	Part No.
⚠	IC:VERTICAL OUTPUT LA78045	QSZBA0SSY004
IC1601⚠	PHOTOCOUPLER PS2501-1W or	QPEW0PS25011
⚠	PHOTO COUPLER PS2501-1L	QPEL0PS25011
IC1602⚠	1.5V REGULATOR PQ015EF01SZ	QSZBA0SSH011
IC1603	IC:SHUNT REGULATOR KIA431-AT	NSZLA0TJY001
IC1604	IC:SHUNT REGULATOR KIA431-AT	NSZLA0TJY001
IC1801	IC AN17812A	QSZBA0SMS017
	COILS	
L1001	PCB JUMPER D0.6-P5.0	JW5.0T
L1031	PCB JUMPER D0.6-P5.0	JW5.0T
L1033	INDUCTOR 15µH-J-26T or	LLAXJATTU150
	INDUCTOR 15µH-K-26T	LLAXKDTKA150
L1041	PCB JUMPER D0.6-P5.0	JW5.0T
L1203	INDUCTOR 22µH-J-26T or	LLAXJATTU220
	INDUCTOR 22µH-K-26T	LLAXKDTKA220
L1204	INDUCTOR 22µH-J-26T or	LLAXJATTU220
	INDUCTOR 22µH-K-26T	LLAXKDTKA220
L1301	INDUCTOR 22µH-K-5FT or	LLARKBSTU220
	INDUCTOR 22µH-K-5FT	LLARKDSKA220
L1302	PCB JUMPER D0.6-P5.0	JW5.0T
L1551	LINEALITY COIL ELH5J6137N or	LLBD00PMS009
	LINEARITY COIL SCC-51µH or	LLBD00ZXQ002
	LINEARITY COIL ELH5L788N	LLBD00ZMS001
L1552	CHOKE COIL 4.7MH or	LLBD00PMM002
	CHOKE COIL 4.7MH	LLBD00AKV010
L1557	CHOKE COIL 22µH-K	LLBD00PKV006
L1601⚠	LINE FILTER 2.7MH ELF15N013A	LLBG00ZMS037
L1604	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
L1609	PCB JUMPER D0.6-P5.0	JW5.0T
L1610	PCB JUMPER D0.6-P5.0	JW5.0T
L1611	PCB JUMPER D0.6-P5.0	JW5.0T
L1612	PCB JUMPER D0.6-P5.0	JW5.0T
L1613	PCB JUMPER D0.6-P5.0	JW5.0T
L1614	INDUCTOR 2.2µH-K-5FT or	LLARKBSTU2R2
	INDUCTOR 2.2µH-K-5FT	LLARKDSKA2R2
L1734	PCB JUMPER D0.6-P5.0	JW5.0T
L1735	PCB JUMPER D0.6-P5.0	JW5.0T
L1737	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K	LLBD00PKV005
L1738	PCB JUMPER D0.6-P5.0	JW5.0T
L1739	INDUCTOR 0.47µH-J-26T or	LLAXJATTUR47
	INDUCTOR 0.47µH-K-26T	LLAXKDTKAR47
L1851	INDUCTOR 2.2µH-K-5FT or	LLARKBSTU2R2
	INDUCTOR 2.2µH-K-5FT	LLARKDSKA2R2
L1852	PCB JUMPER D0.6-P5.0	JW5.0T
L1853	PCB JUMPER D0.6-P5.0	JW5.0T
L1854	INDUCTOR 2.2µH-K-5FT or	LLARKBSTU2R2
	INDUCTOR 2.2µH-K-5FT	LLARKDSKA2R2
L1855	INDUCTOR 2.2µH-K-5FT or	LLARKBSTU2R2
	INDUCTOR 2.2µH-K-5FT	LLARKDSKA2R2
L1856	PCB JUMPER D0.6-P5.0	JW5.0T
L1857	PCB JUMPER D0.6-P5.0	JW5.0T
	TRANSISTORS	
Q1282	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1285	RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
	RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q1301	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1303	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q1304	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1305	TRANSISTOR 2SC1627Y-TPE2	QQSY02SC1627
Q1306	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1307	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1308	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1454	RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
	RES. BUILT-IN TRANSISTOR 2SC3400 or	2SC3400Z
	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q1571⚠	TRANSISTOR TT2140LS-YB11 or	QQZZ00TT2140
⚠	TRANSISTOR 2SC5885000RF	QQZZ02SC5885
Q1572	TRANSISTOR 2SC1627Y-TPE2	QQSY02SC1627
Q1591⚠	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
⚠	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
⚠	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
⚠	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
⚠	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
⚠	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1601⚠	FET 2SK3407	QFFZ02SK3407
Q1602⚠	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
⚠	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q1604⚠	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
⚠	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
⚠	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
⚠	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1605	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815

Ref. No.	Description	Part No.
Q1606⚠	TRANSISTOR 2SA950(O) or	Q2SA9500TPE2
⚠	TRANSISTOR 2SA950(Y) or	Q2SA950YTPE2
⚠	TRANSISTOR KTA1271(Y)	NQSY0KTA1271
Q1607	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1608	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q1610⚠	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
⚠	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
⚠	TRANSISTOR KTA1266(GR) or	NQS40KTA1266
⚠	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q1612	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1613	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q1614	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1615	TRANSISTOR KTC2804(Y)	NQQY0KTC2804
Q1616	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
	TRANSISTOR 2SC2120-Y(TPE2) or	QQSY02SC2120
	TRANSISTOR KTC3203(Y)	NQSY0KTC3203
Q1619	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1621	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1622	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1623	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1731	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1736	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR 2SC2785(H) or	QQSH02SC2785
	TRANSISTOR 2SC2785(J) or	QQSJ02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR KTC3198(GR) or	NQS40KTC3198
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
RESISTORS		
R1001	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1002	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1032	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1034	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R1037	CHIP RES.(1608) 1/10W J 180 Ω	RRXAJB5Z0181
R1038	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1039	CHIP RES.(1608) 1/10W J 180 Ω	RRXAJB5Z0181
R1041	CHIP RES.(1608) 1/10W J 82k Ω	RRXAJB5Z0823
R1046	CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R1047	CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R1053	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R1201	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R1202	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R1203	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R1204	CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R1205	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1206	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R1207	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R1208	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R1209	CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R1210	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R1211	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1213	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1215	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1216	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R1220	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R1221	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R1222	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R1223	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R1224	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R1225	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R1226	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1227	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1228	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1229	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R1230	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R1231	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R1232	CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R1233	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1234	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1235	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R1239	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R1240	CARBON RES. 1/4W J 1M Ω	RCX4JATZ0105
R1241	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R1257	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1260	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1281	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R1284	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R1285	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R1289	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1293	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1294	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R1301	CHIP RES.(1608) 1/10W J 180k Ω	RRXAJB5Z0184
R1302	CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R1303	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R1304	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102

Ref. No.	Description	Part No.
R1305	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1306	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R1307	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1308	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R1310	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1311	CHIP RES.(1608) 1/10W J 10M Ω	RRXAJB5Z0106
R1312	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1313	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1314	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1317	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1318	PCB JUMPER D0.6-P5.0	JW5.0T
R1319	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R1320	CHIP RES.(1608) 1/10W J 120k Ω	RRXAJB5Z0124
R1321⚠	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R1322	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R1323	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R1324	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1327	CARBON RES. 1/4W J 33 Ω	RCX4JATZ0330
R1328	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R1330	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R1334	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1335	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1336	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1337	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1338	CARBON RES. 1/4W J 18 Ω	RCX4JATZ0180
R1339⚠	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R1340	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R1341	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R1346	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R1347	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R1357	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1358	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1359	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1430	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R1451	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R1453	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R1454	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R1469	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R1472	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1473	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R1476	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1477	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R1478	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R1479	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1480	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1544⚠	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R1551	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R1552	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1555	CARBON RES. 1/2W J 82 Ω or	RCX2JZQZ0820
	CARBON RES. 1/2W J 82 Ω	RCX2820KA013
R1556	CARBON RES. 1/4W J 1 Ω	RCX4JATZ01R0
R1557	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R1558	PCB JUMPER D0.6-P5.0	JW5.0T
R1559	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1560	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R1561	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R1562	CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
R1563	CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
R1564	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R1565⚠	PCB JUMPER D0.6-P5.0	JW5.0T
R1566⚠	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2

Ref. No.	Description	Part No.
R1567⚠	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R1568	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1569⚠	CARBON RES. 1/4W J 39 Ω	RCX4JATZ0390
R1570⚠	CARBON RES. 1/4W J 1.8 Ω	RCX4JATZ01R8
R1571	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1572	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R1573	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R1574⚠	METAL OXIDE FILM RES. 1W J 1k Ω or	RN01102ZU001
⚠	METAL OXIDE FILM RES. 1W J 1k Ω	RN01102DP003
R1575⚠	METAL OXIDE FILM RES. 2W J 100 Ω or	RN02101ZU001
⚠	METAL OXIDE FILM RES. 2W J 100 Ω	RN02101DP004
R1576	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R1577	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1578⚠	CARBON RES. 1/4W J 2.2 Ω	RCX4JATZ02R2
R1579⚠	PCB JUMPER D0.6-P5.0	JW5.0T
R1580⚠	CARBON RES. 1/4W J 39 Ω	RCX4JATZ0390
R1581⚠	CARBON RES. 1/4W J 39 Ω	RCX4JATZ0390
R1582	CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
R1583⚠	METAL OXIDE FILM RES. 2W J 3.3 Ω or	RN023R3ZU001
⚠	METAL OXIDE FILM RES. 2W J 3.3 Ω	RN023R3DP004
R1584⚠	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1586	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1587	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1588⚠	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R1589	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1590	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1592⚠	CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R1593⚠	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R1594⚠	CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R1595⚠	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R1596⚠	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R1597	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R1598⚠	CHIP RES.(1608) 1/10W J 39k Ω	RRXAJB5Z0393
R1599⚠	CHIP RES.(1608) 1/10W J 15k Ω	RRXAJB5Z0153
R1601⚠	CEMENT RES. 5W K 1.2 Ω or	RW051R2DP007
⚠	CEMENT RES. 5W K 1.2 Ω or	RW051R2PG002
⚠	CEMENT RESISTOR 5W J 1.2 Ω	RW051R2PAK11
R1602	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R1603	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R1604⚠	CARBON RES. 1/4W J 820k Ω	RCX4JATZ0824
R1605⚠	CARBON RES. 1/4W J 820k Ω	RCX4JATZ0824
R1606	PCB JUMPER D0.6-P5.0	JW5.0T
R1607	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R1608	CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R1610	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R1611⚠	METAL OXIDE FILM RES. 2W J 0.27 Ω or	RN02R27ZU001
⚠	METAL OXIDE FILM RES. 2W J 0.27 Ω	RN02R27DP004
R1612⚠	METAL RESISTOR 1W J 0.56 Ω or	RN01R56ZU001
⚠	METAL OXIDE FILM RES. 1W J 0.56 Ω	RN01R56DP003
R1613	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R1614	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R1615	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1616	PCB JUMPER D0.6-P5.0	JW5.0T
R1617	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1618⚠	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R1619	METAL OXIDE FILM RES. RS1FS 1.8k Ω JL or	RN01182ZU001
	METAL OXIDE FILM RES. 1W J 1.8k Ω	RN01182DP003
R1620⚠	METAL OXIDE FILM RES. 1W J 6.8k Ω or	RN01682ZU001
⚠	METAL OXIDE FILM RES. 1W J 6.8k Ω	RN01682DP003
R1621⚠	METAL OXIDE FILM RES. 1W J 6.8k Ω or	RN01682ZU001
⚠	METAL OXIDE FILM RES. 1W J 6.8k Ω	RN01682DP003

Ref. No.	Description	Part No.
R1622	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R1623⚠	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R1624⚠	CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R1625⚠	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1629	CARBON RES. 1/4W J 13k Ω	RCX4JATZ0133
R1630	CARBON RES. 1/4W J 13k Ω	RCX4JATZ0133
R1631	CARBON RES. 1/4W J 13k Ω	RCX4JATZ0133
R1632⚠	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R1633⚠	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R1634	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R1635	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R1638	CHIP RES.(1608) 1/10W J 10 Ω	RRXAJB5Z0100
R1639⚠	CARBON RES. 1/2W J 1.2k Ω or	RCX2JZQZ0122
⚠	CARBON RES. 1/2W J 1.2k Ω	RCX2122KA013
R1640⚠	CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R1641	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1642	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R1643⚠	CARBON RES. 1/2W J 18 Ω or	RCX2JZQZ0180
⚠	CARBON RES. 1/2W J 18 Ω	RCX2180KA013
R1644	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1645⚠	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1646	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1647⚠	CARBON RES. 1/4W J 8.2 Ω	RCX4JATZ08R2
R1648⚠	CARBON RES. 1/4W J 8.2 Ω	RCX4JATZ08R2
R1649	CARBON RES. 1/2W J 33 Ω or	RCX2JZQZ0330
	CARBON RES. 1/2W J 33 Ω	RCX2330KA013
R1650	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R1651⚠	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1652	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R1653	CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R1654⚠	CARBON RES. 1/2W J 18 Ω or	RCX2JZQZ0180
⚠	CARBON RES. 1/2W J 18 Ω	RCX2180KA013
R1656	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1657	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R1658⚠	CARBON RES. 1/2W J 1.5 Ω	RCX2JZQZ01R5
R1659⚠	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1660⚠	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1661	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R1669⚠	PCB JUMPER D0.6-P5.0	JW5.0T
R1670	PCB JUMPER D0.6-P5.0	JW5.0T
R1673	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R1674	CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R1675	PCB JUMPER D0.6-P5.0	JW5.0T
R1681	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R1682	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R1683	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R1684	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R1685	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1686⚠	CARBON RES. 1/4W J 1.2 Ω	RCX4JATZ01R2
R1687	CARBON RES. 1/4W G 5.6k Ω	RCX4GATZ0562
R1688	CARBON RES. 1/4W G 15k Ω	RCX4GATZ0153
R1689	CARBON RES. 1/4W G 18k Ω	RCX4GATZ0183
R1690	CARBON RES. 1/4W G 56k Ω	RCX4GATZ0563
R1691	PCB JUMPER D0.6-P12.5	JW12.5T
R1695	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R1696	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R1697	CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R1698	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R1701	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJB5Z0750
R1702	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R1703	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104

Ref. No.	Description	Part No.
R1704	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R1706	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R1707	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1708	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R1733	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R1734	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJB5Z0750
R1735	CHIP RES.(1608) 1/10W J 220 Ω	RRXAJB5Z0221
R1736	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJB5Z0182
R1737	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R1749	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R1750	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R1752	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R1753	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R1788	CHIP RES.(1608) 1/10W J 75 Ω	RRXAJB5Z0750
R1789	CARBON RES. 1/4W J 75 Ω	RCX4JATZ0750
R1790	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R1791	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R1801⚠	METAL OXIDE FILM RES. 2W J 5.6 Ω or	RN025R6ZU001
⚠	METAL OXIDE FILM RES. 2W J 5.6 Ω	RN025R6DP004
R1802⚠	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R1803⚠	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R1814	PCB JUMPER D0.6-P5.0	JW5.0T
R1815	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R1851	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1852	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
SWITCHES		
SW1201	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1202	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1203	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1204	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1205	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1206	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1207	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1208	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1209	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003

Ref. No.	Description	Part No.
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1210	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1211	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH SKHHAM or	SST0101AL029
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
	MISCELLANEOUS	
BC1571	BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC1601	PCB JUMPER D0.6-P5.0	JW5.0T
BC1602	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC1605	PCB JUMPER D0.6-P5.0	JW5.0T
BC1606	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC1607	PCB JUMPER D0.6-P5.0	JW5.0T
BC1731	PCB JUMPER D0.6-P5.0	JW5.0T
BC1732	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC1736	PCB JUMPER D0.6-P5.0	JW5.0T
BC1737	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
CF1031	CERAMIC TRAP 4.5MHz or	FBE455PMR003
	4.5M TRAP XT4.5MB2 or	FBE455PLN001
	CERAMIC TRAP 4.5MHz	FBE455PMS002
CF1032	CERAMIC FILTER SFSRA4M50CF00-B0 or	FBB455PMR004
	4.5M FILTER LTH4.5MCB	FBB455PLN001
F1601⚠	FUSE 4.00A/125V or	PAGU20CAG402
⚠	FUSE 51MS040L or	PAFC20CHV402
⚠	FUSE STC4A125V U/CT or	PAGE20CW3402
⚠	FUSE 4.00A/125V	PAGG20CNG402
FH1601	FUSE HOLDER MSF-015 or	XH01Z00LY001
	FUSE HOLDER FH-V-03078	XH01Z00DK001
FH1602	FUSE HOLDER MSF-015 or	XH01Z00LY001
	FUSE HOLDER FH-V-03078	XH01Z00DK001
J1001	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
JK1701	RCA JACK(YELLOW) MTJ-032-05B-20	JXRL010LY038
JK1702	RCA JACK(RED) MTJ-032-05A-21	JYRL010LY010
JK1703	RCA JACK(WHITE) MTJ-032-05B-22	JXRL010LY039
JK1730	RCA JACK MSP-241V-05 PBSN W/O	JXRL010LY085
JK1801	MINI JACK HSJ2000-01-010 or	JYSL010HD002
	MINI JACK MSJ-2000 or	JYSL010LY003
	PHONE JACK DP3-25-7-001	JYSL010RP002
PS1602 ⚠	THERMISTOR ZPB45BL7R0A	QNZZ45BL7R0A
RS1201	REMOCON RECEIVE UNIT PIC-37042SR or	USESJRSKK034
	REMOCON RECEIVE UNIT PIC-26042SR-2	USESJRSKK032
SA1601 ⚠	SURGE ABSORBER JVR-07N471K or	NVQZVR07N471
⚠	SURGE ABSORBER CNR-10D471K or	NVQZR10D471K
⚠	SURGE ABSORBER CNR-07D471K or	NVQZR07D471K
⚠	SURGE ABSORBER PVR-07D471KB	NVQZ07D471KB
SF1001	SAW FILTER SAFGM45M7VHHzC0B03	FBB456PMR008
SG1601 ⚠	GAP. FNR-G3.10D	FAZ000LD6005
T1571⚠	FLYBACK TRANS BSC25-2095S	LTF00CPS2030
T1572	H0RIZONTAL DRIVE TRANS LP2-005	LTH00CPA5005
T1601⚠	SWITCHING TRANS 03709	LTT00CPKT111
TB4	H/V HEAT SINK PHz ASSEMBLY TD810UA	0EM408434
TB5	19VPOW HEAT SINK PHB ASSEMBLYT7400UA	0EM407685
TB6	POW HEAT SINK PHY TD808UJ	0EM408428
TL2	SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
TP1301	PCB JUMPER D0.6-P10.0	JW10.0T
TP1303	PCB JUMPER D0.6-P7.5	JW7.5T
TP1304	PCB JUMPER D0.6-P5.0	JW5.0T
TP1305	PCB JUMPER D0.6-P5.0	JW5.0T
TP1401	PCB JUMPER D0.6-P10.0	JW10.0T
TP1402	PCB JUMPER D0.6-P10.0	JW10.0T
TP1403	PCB JUMPER D0.6-P7.5	JW7.5T
TP1404	PCB JUMPER D0.6-P7.5	JW7.5T
TP1405	PCB JUMPER D0.6-P7.5	JW7.5T
TP1501	PCB JUMPER D0.6-P5.0	JW5.0T
TP1502	PCB JUMPER D0.6-P5.0	JW5.0T
TP1503	PCB JUMPER D0.6-P5.0	JW5.0T
TP1731	PCB JUMPER D0.6-P12.5	JW12.5T
TP1732	PCB JUMPER D0.6-P10.0	JW10.0T
TP1733	PCB JUMPER D0.6-P10.0	JW10.0T
TU1001	TUNER B8135AP	UTUNNTUSP023
VR1601 ⚠	CARBON P.O.T. 10k Ω B or	VRCB103KA011
⚠	CARBON P.O.T. 10k Ω B	VRCB103HH014
W1601⚠	AC CORD PB8K9F9110A-057 or	WAC0172LW008
⚠	AC CORD WAC0172LTE01 or	WAC0172LTE01
⚠	AC CORD WAC0172AS006 or	WAC0172AS006
⚠	AC CORD LA-2366 or	WAC0172LW006
⚠	AC CORD A0A0280-007	WAC0172LTE04
X1301	X'TAL 3.579545 MHz or	FXD355LLN003
	X'TAL 3.579545MHz(30PPM)	FXD355LCHE01

CRT CBA

Ref. No.	Description	Part No.
	CRT CBA Consists of the following	----------
	CAPACITORS	
C501	CERAMIC CAP. B K 1000pF/2KV or	CCD3DKP0B102
	CERAMIC CAP. B K 1000pF/2KV or	CA3D102MR030
	CERAMIC CAP. B K 1000pF/2KV	CCD3DKD0B102
C502	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C503	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C511	CERAMIC CAP.(AX) B K 470pF/50V	CCA1JKT0B471
C521	CERAMIC CAP.(AX) B K 470pF/50V	CCA1JKT0B471
C531	CERAMIC CAP.(AX) B K 560pF/50V	CCA1JKT0B561
	CONNECTORS	
CN501	PIN CONNECTOR 005P-5100 or	JTEA001TG001
	CONNECTOR PIN, 1P LV or	1700576
	CONNECTOR PIN, 1P RT-01N-2.3A	1730688
	DIODES	
D511	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D521	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D531	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
	COILS	
L501	PCB JUMPER D0.6-P5.0	JW5.0T
	TRANSISTORS	
Q511	TRANSISTOR KTC3503Y or	NQWY0KTC3503
	TRANSISTOR 2SC3619	QQ9Z02SC3619
Q521	TRANSISTOR KTC3503Y or	NQWY0KTC3503
	TRANSISTOR 2SC3619	QQ9Z02SC3619

Ref. No.	Description	Part No.
Q531	TRANSISTOR KTC3503Y or	NQWY0KTC3503
	TRANSISTOR 2SC3619	QQ9Z02SC3619
	RESISTORS	
R506	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R507	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R510⚠	METAL RESISTOR 3W J 10k Ω or	RN03103ZU001
⚠	FIXED METAL OXIDE FILM RES. 3W J 10k Ω	RN03103DP005
R511	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R512	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R513	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R516	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R517	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R520⚠	METAL RESISTOR 3W J 10k Ω or	RN03103ZU001
⚠	FIXED METAL OXIDE FILM RES. 3W J 10k Ω	RN03103DP005
R521	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R522	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R523	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R526	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R527	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R530⚠	METAL RESISTOR 3W J 10k Ω or	RN03103ZU001
⚠	FIXED METAL OXIDE FILM RES. 3W J 10k Ω	RN03103DP005
R531	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R532	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R533	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
	MISCELLANEOUS	
CL501A	LEAD WIRE 3P/410MM	WX1T7400-001
CL502A	LEAD WIRE 5P 530MM	WX1TD810-001
JK501⚠	CRT SOCKET ISHS40ST or	JSCC290PK006
⚠	CRT SOCKET HPS0521-012212	JSCC290HD012

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